

A photograph of a mountain landscape. In the foreground, a river flows from the top left towards the center. The riverbank on the right is covered in a dense forest of green trees. In the background, a large, rugged mountain peak rises against a blue sky with some white clouds. The mountain's reflection is visible in the water. The overall scene is a natural, scenic view.

DOCTOR
and
THE MOUNTAINS



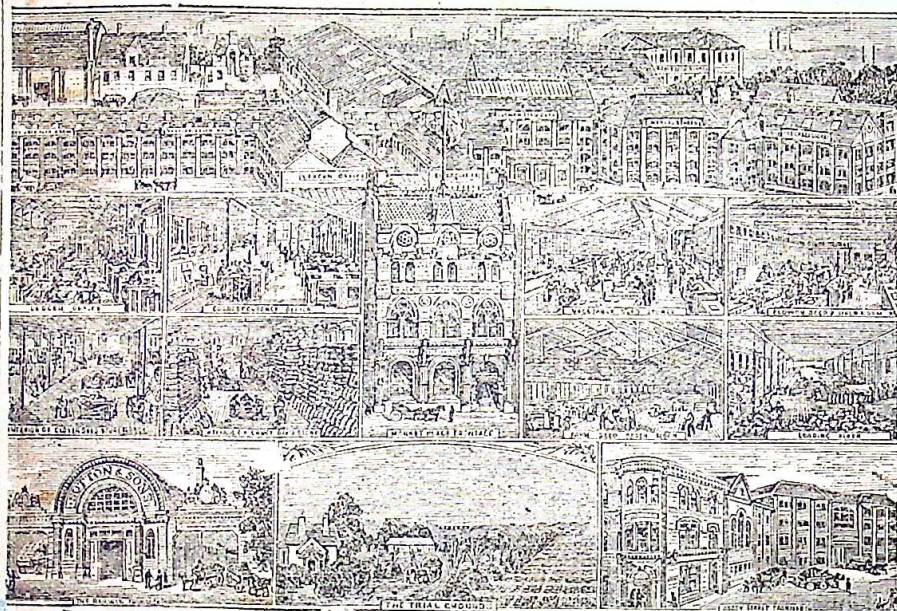
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A MINIATURE VIEW OF THE ROYAL SEED ESTABLISHMENT, READING.

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Sutton's Farm Seeds.
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Seedsman by Royal
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1837.

INCORPORATED

1848.

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THIS SOCIETY combines the advantages of Mutual Assurance with Moderate Premiums.

THE PREMIUMS are so moderate that at usual ages for Assurance £1200 or £1250 may generally be secured from the first for the yearly payment which would elsewhere assure (with profits) £1000 only—the difference being equivalent to an immediate and certain Bonus of 20 to 25 per cent.

The Whole PROFITS go to the Policyholders, on a system at once safe and equitable,—no share being given to those by whose early death there is a *loss* to the common fund. On this Principle large additions have been made to the policies of those who live to participate, notwithstanding the lowness of the premiums.

The SURPLUS at last Investigation (1887) was £1,051,035, of which two-thirds was distributed among 9,384 Policies entitled. First additions were (with a few exceptions) from 18 or 20 to 34 per cent., according to age and class; other Policies, which had shared before were increased in all to £1500, £1600, £1800, and upwards.

Next Investigation with Division of Surplus takes place as at close of 1894.

Fully two-thirds of the amount of Claims paid last year was in respect of Policies which had participated in the Surplus—the Bonus Additions averaging almost 50 per cent. of the original Assurances.

Examples of Premium for £100 at Death With Profits.

AGE.	25	30	35	40	45	50
During Life.....	£1 18 0	£2 1 6	£2 6 10	£2 14 9	£3 5 9	£4 1 7
21 Payments	2 12 6	2 15 4	3 0 2	3 7 5 ⁺	3 17 6	4 12 1

The usual *non-participating* Rates of other offices differ little from these Premiums.

* A person of 30 may secure £1000 at Death by a yearly payment, *during life*, of £20 : 15s.

[This premium would generally elsewhere secure £800 only, instead of £1000.]

OR he may secure £1000 by 21 payments of £27 : 13 : 4—*being thus free from payment after age 50.*

+ At age 40, the Premium *ceasing at age 60* is for £1000 (with profits), £33 : 14 : 2,—being about the same as most Offices require during the whole of life. To Professional Men and others whose income is dependent on health, the limited payment system is specially recommended.

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REPORTS with full information and TABLES of RATES may be had on application.

October 1893.

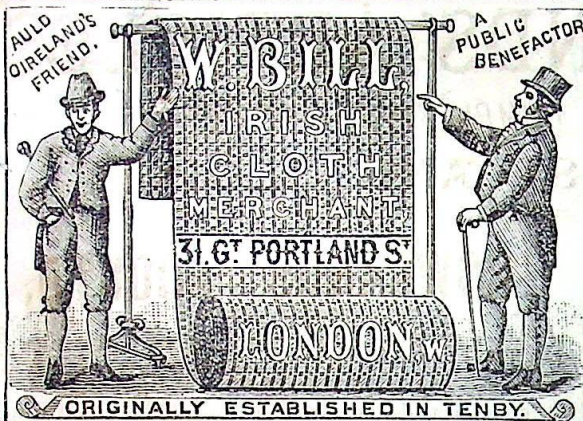
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IRISH FRIEZES (strong, rough TWEEDS) made in the Marquis of Waterford's Industrial House (*vide* special circular). These are *par excellence* the Cloths for Country Suits, for Travellers, for Sportsmen, and for Cold Climates, being pliable, hard-wearing, and almost weather-proof; made in useful mixtures; dark and light, plain and plaids. Make also most useful and comfortable Ulsters. Price 3s. yard, 28 inches wide.

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IRISH "SAXONY" TWEEDS for better wear, of smooth appearance, made from soft wools; 3s. 6d., & 3s. 9d. yard. Finest 4s. yard. Specially for Clerical wear, 3s., 3s. 3d., & 3s. 6d. yard.

IRISH HOMESPUNS make capital suits for hot climates or for home summer wear, being light, woolly, and cool, 2s. 3d. and 2s. 6d. yard, 28 inches. Some of these are also admirably suited for ladies' warm Gowns, Cloaks, and Ulsters; others for Cycling, etc.

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A pure Toilet Powder in three tints, White, Rose, and Cream for ladies of a Brunette complexion and those who do not like white powder. Boxes, 1s.; large boxes, 2s. 6d.

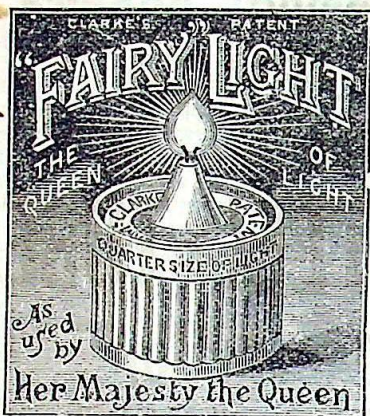
Ask Chemists for ROWLANDS' ARTICLES, of 20, HATTON GARDEN, LONDON, and avoid spurious imitations,

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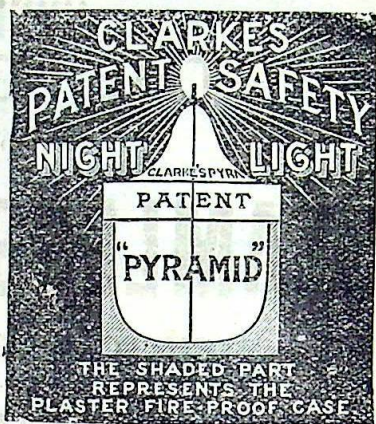
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NO PARAFFIN OR OTHER DANGEROUS MATERIAL USED
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Double Wicks, burn 10 hours each, in Boxes
containing 6 Lights & Glass. 1s. per Box.



Single Wicks, burn 9 hours each, in Boxes
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CLARKE'S IMPROVED PANNIKIN

FOR USE WITH

CLARKE'S

"PYRAMID"

NURSERY LAMP.

By this invention any liquid food can be poured out or drunk without scum or grease passing through the spout, and prevents spilling when poured into a Feeding Bottle, so objectionable with all other Pannikins.

These Pannikins will fit all the old "Pyramid" Nursery Lamps, and can be purchased separately.

N.B.—Ask for CLARKE'S PANNIKIN, and see that his name and the registered number (Registered 91,241) are on the Pannikin, and Trade Mark, "Pyramid."

CLARKE'S Patent "PYRAMID" NIGHT LIGHTS are the only Lights suitable for these Lamps.



CLARKE'S
"PYRAMID" NURSERY LAMP.
2s. 6d., 3s. 6d., 5s., and 6s. each.

For Burning in
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Nursery Lamp.

CAUTION.—TO PREVENT BURGLARIES.—A "Pyramid" Night Light should be lighted in the front and back of every house as soon as it is dark. Housebreakers have the greatest dread of a light. The Police recommend a "Pyramid" Night Light as the best safeguard. Almost all the burglaries perpetrated might have been prevented, and much VALUABLE PROPERTY SAVED, if this simple and inexpensive plan had always been adopted. The "Pyramid" Night Lights are much larger and give DOUBLE THE LIGHT of the common night lights, and are, therefore, particularly adapted for this purpose. Manufactured in Patent Fire-proof Plaster Cases. No paraffin or other dangerous material used in their manufacture.

* All these Lights will burn in "Fairy," "Fairy-Pyramid," and "Pyramid" Lamps.

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STRENGTH WITH LIGHTNESS.

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SEAMLESS STEEL TUBE,

COLD DRAWN,

FOR ENGINEERING, CYCLE,

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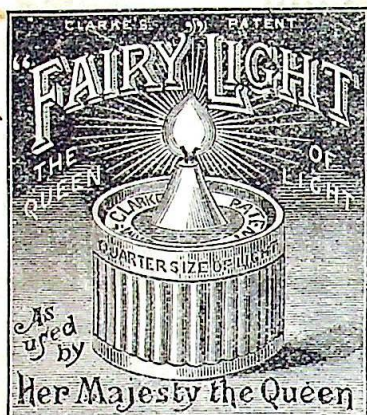
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CLARKE'S PATENT LIGHTS

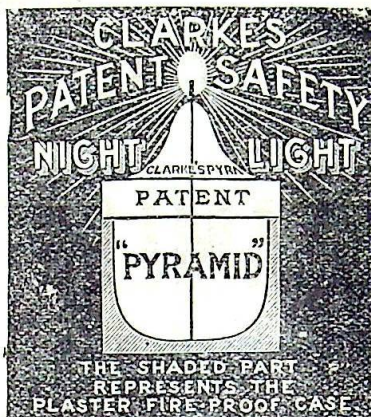
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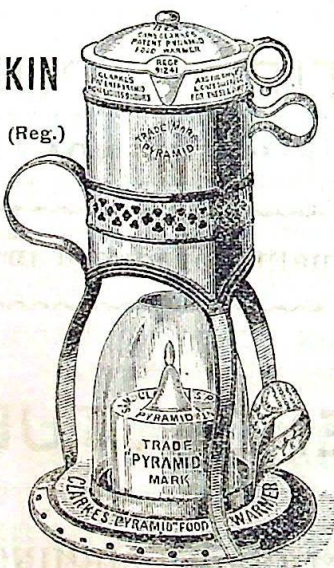
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AN
Almanack

For the Year of Our Lord

1894

BY
JOSEPH WHITAKER, F.S.A.

CONTAINING AN ACCOUNT OF THE

Astronomical and other Phenomena

A LARGE AMOUNT OF
INFORMATION RESPECTING THE GOVERNMENT
FINANCES POPULATION COMMERCE AND
GENERAL STATISTICS OF THE BRITISH
EMPIRE THROUGHOUT THE WORLD
WITH SOME NOTICE OF
OTHER COUNTRIES
&c. &c.

LONDON

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ADVERTISEMENT

MOST of the changes which will be found in the earlier portion of WHITAKER'S ALMANACK, are in the direction of a further extension of the information afforded, and a more convenient arrangement of its contents. Its various sections have, by a gradual process of selection, come to be regarded as integral parts of a familiar entity. By very careful economy of space, however, it has been found possible to give additional information in many of the divisions, without encroaching on the space allotted to others.

In the various Departments of the Public Service, the changes have again been very numerous, and almost every page in which a nominal roll of officials occurs, the necessary alterations have been most extensive. The same also applies to the Peerage, and to the various Orders of Knighthood and their Companionships.

In the Supplemental part of this Edition, a considerable number of articles appear for the first time. These include Summaries of the Year's Work in various Public Departments, Legal Notes on Familiar Subjects, Friendly Societies, Naval Disasters, the Distribution of Land and Water, Vital Statistics, and some shorter contributions on various matters of current interest. In order to find room for these additions, it has been found necessary to further enlarge the Almanack, which now extends to 744 pages.

The Editor has again to repeat his thanks to numerous correspondents at home and abroad for corrections and suggestions. Although it is not always possible to adopt the latter, for reasons wholly apart from their merit, he is always glad to consider proposals having for their object the improvement of the Almanack. To men on ships at sea, to men at dismal up-country stations, to men quartered at solitary outposts of the Empire, to officers, merchants, and private gentlemen in every part of the world, and to many ladies, the Editor takes this opportunity of acknowledging his obligation for numerous useful communications received by him during the past year. He further ventures to hope that he may continue to enjoy the friendly help of his readers throughout the Empire, in his efforts to maintain WHITAKER'S ALMANACK as the best in the world.

In order that full advantage may be taken of suggestions, letters should reach the Editor's hands not later than the beginning of October.

WARWICK LANE, PATERNOSTER ROW,
LONDON, 14th December, 1893.

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ADVERTISEMENT

MOST of the changes which will be found in the earlier portion of WHITAKER'S ALMANACK, are in the direction of a further extension of the information afforded, and a more convenient arrangement of its contents. Its various sections have, by a gradual process of selection, come to be regarded as integral parts of a familiar entity. By very careful economy of space, however, it has been found possible to give additional information in many of the divisions, without encroaching on the space allotted to others.

In the various Departments of the Public Service, the changes have again been very numerous, and almost every page in which a nominal roll of officials occurs, the necessary alterations have been most extensive. The same also applies to the Peerage, and to the various Orders of Knighthood and their Companionships.

In the Supplemental part of this Edition, a considerable number of articles appear for the first time. These include Summaries of the Year's Work in various Public Departments, Legal Notes on Familiar Subjects, Friendly Societies, Naval Disasters, the Distribution of Land and Water, Vital Statistics, and some shorter contributions on various matters of current interest. In order to find room for these additions, it has been found necessary to further enlarge the Almanack, which now extends to 744 pages.

The Editor has again to repeat his thanks to numerous correspondents at home and abroad for corrections and suggestions. Although it is not always possible to adopt the latter, for reasons wholly apart from their merit, he is always glad to consider proposals having for their object the improvement of the Almanack. To men on ships at sea, to men at dismal up-country stations, to men quartered at solitary outposts of the Empire, to officers, merchants, and private gentlemen in every part of the world, and to many ladies, the Editor takes this opportunity of acknowledging his obligation for numerous useful communications received by him during the past year. He further ventures to hope that he may continue to enjoy the friendly help of his readers throughout the Empire, in his efforts to maintain WHITAKER'S ALMANACK as the best in the world.

In order that full advantage may be taken of suggestions, letters should reach the Editor's hands not later than the beginning of October.

WARWICK LANE, PATERNOSTER ROW,
LONDON, 14th December, 1893.

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A Calendar

For ascertaining Any Day of the Week for any given time within Two Hundred Years from the introduction of the New Style, 1752, to 1952 inclusive.

YEARS 1753 TO 1952.

	Jan	Feb	Mar	Apr	May	Jun	July	Aug	Sep	Oct	Nov	Dec
1761 1801	1767 1807	1778 1818	1789 1829	1795 1835	1846 1886	1857 1897	1863 1903	1874 1914	1885 1925	1891 1931	*	
1762 1802	1773 1813	1779 1819	1790 1830	1841 1881	1847 1887	1858 1898	1869 1909	1875 1915	1886 1926	1897 1937	1891 1942	
1763 1803	1768 1814	1774 1825	1785 1831	1791 1842	1853 1893	1859 1910	1870 1921	1881 1927	1887 1938	1898 1949		
1764 1804	1769 1815	1775 1826	1786 1837	1797 1843	1854 1894	1865 1905	1871 1911	1882 1922	1893 1933	1899 1939		
1765 1805	1770 1821	1776 1827	1787 1838	1798 1849	1855 1895	1866 1906	1877 1917	1883 1923	1894 1934	1900 1945		
1766 1806	1771 1822	1777 1828	1788 1839	1799 1850	1856 1896	1867 1907	1878 1918	1889 1929	1895 1935	1946		
1767 1807	1772 1823	1778 1829	1789 1840	1800 1860	1861 1901	1872 1913	1883 1919	1894 1930	1900 1941	1917		
1768 1808	1773 1824	1779 1830	1790 1841	1801 1861	1862 1902	1873 1914	1884 1920	1895 1931	1901 1942	1918		
1769 1809	1774 1825	1780 1836	1791 1842	1802 1862	1863 1903	1874 1915	1885 1921	1896 1932	1902 1943	1919		
1770 1810	1775 1826	1781 1837	1792 1843	1803 1863	1864 1904	1875 1916	1886 1922	1897 1933	1903 1944	1920		
1771 1811	1776 1827	1782 1838	1793 1844	1804 1864	1865 1905	1876 1917	1887 1923	1898 1934	1904 1945	1921		
1772 1812	1777 1828	1783 1839	1794 1845	1805 1865	1866 1906	1877 1918	1888 1924	1899 1935	1905 1946	1922		
1773 1813	1778 1829	1784 1840	1795 1846	1806 1866	1867 1907	1878 1919	1889 1925	1900 1936	1906 1947	1923		
1774 1814	1779 1830	1785 1841	1796 1847	1807 1867	1868 1908	1879 1920	1890 1926	1901 1937	1907 1948	1924		
1775 1815	1780 1831	1786 1842	1797 1848	1808 1868	1869 1909	1880 1921	1891 1927	1902 1938	1908 1949	1925		
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1778 1818	1783 1834	1789 1845	1800 1851	1811 1871	1872 1912	1883 1924	1894 1930	1905 1941	1911 1952	1928		
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1780 1820	1785 1836	1791 1847	1802 1853	1813 1873	1874 1914	1885 1926	1896 1932	1907 1943	1913 1954	1930		
1781 1821	1786 1837	1792 1848	1803 1854	1814 1874	1875 1915	1886 1927	1897 1933	1908 1944	1914 1955	1931		
1782 1822	1787 1838	1793 1849	1804 1855	1815 1875	1876 1916	1887 1928	1898 1934	1909 1945	1915 1956	1932		
1783 1823	1788 1839	1794 1850	1805 1851	1816 1876	1877 1917	1888 1929	1899 1935	1910 1946	1916 1957	1933		
1784 1824	1789 1840	1795 1851	1806 1852	1817 1877	1878 1918	1889 1930	1900 1936	1911 1947	1917 1958	1934		
1785 1825	1790 1841	1796 1852	1807 1853	1818 1878	1879 1919	1890 1931	1901 1937	1912 1948	1918 1959	1935		
1786 1826	1791 1842	1797 1853	1808 1854	1819 1879	1880 1920	1891 1932	1902 1938	1913 1949	1919 1960	1936		
1787 1827	1792 1843	1798 1854	1809 1855	1820 1880	1881 1921	1892 1933	1903 1939	1914 1950	1920 1961	1937		
1788 1828	1793 1844	1799 1855	1810 1856	1821 1881	1882 1922	1893 1934	1904 1940	1915 1951	1921 1962	1938		
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1790 1830	1795 1846	1801 1857	1812 1858	1823 1883	1884 1924	1895 1936	1906 1942	1917 1953	1923 1964	1940		
1791 1831	1796 1847	1802 1858	1813 1859	1824 1884	1885 1925	1896 1937	1907 1943	1918 1954	1924 1965	1941		
1792 1832	1797 1848	1803 1859	1814 1860	1825 1885	1886 1926	1897 1938	1908 1944	1919 1955	1925 1966	1942		
1793 1833	1798 1849	1804 1860	1815 1861	1826 1886	1887 1927	1898 1939	1909 1945	1920 1956	1926 1967	1943		
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1804 1844	1809 1860	1815 1871	1826 1872	1837 1897	1898 1938	1909 1944	1920 1950	1931 1961	1937 1978	1954		
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1810 1850	1815 1866	1821 1877	1832 1878	1843 1904	1905 1944	1916 1950	1927 1956	1938 1967	1944 1984	1960		
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1815 1855	1820 1871	1826 1882	1837 1883	1848 1909	1910 1949	1921 1955	1932 1961	1943 1972	1949 1989	1965		
1816 1856	1821 1872	1827 1883	1838 1884	1849 1910	1911 1950	1922 1956	1933 1962	1944 1973	1950 1990	1966		
1817 1857	1822 1873	1828 1884	1839 1885	1850 1911	1912 1951	1923 1957	1934 1963	1945 1974	1951 1991	1967		
1818 1858	1823 1874	1829 1885	1840 1886	1851 1912	1913 1952	1924 1958	1935 1964	1946 1975	1952 1992	1968		
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1820 1860	1825 1876	1831 1887	1842 1888	1853 1914	1915 1954	1926 1960	1937 1966	1948 1977	1954 1994	1970		
1821 1861	1826 1877	1832 1888	1843 1889	1854 1915	1916 1955	1927 1961	1938 1967	1949 1978	1955 1995	1971		
1822 1862	1827 1878	1833 1889	1844 1890	1855 1916	1917 1956	1928 1962	1939 1968	1950 1979	1956 1996	1972		
1823 1863	1828 1879	1834 1890	1845 1891	1856 1917	1918 1957	1929 1963	1940 1969	1951 1980	1957 1997	1973		
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1825 1865	1830 1881	1836 1892	1847 1893	1858 1919	1920 1959	1931 1965	1942 1971	1953 1982	1959 1999	1975		
1826 1866	1831 1882	1837 1893	1848 1894	1859 1920	1921 1960	1932 1966	1943 1972	1954 1983	1960 2000	1976		
1827 1867	1832 1883	1838 1894	1849 1895	1860 1921	1922 1961	1933 1967	1944 1973	1955 1984	1961 2001	1977		
1828 1868	1833 1884	1839 1895	1850 1896	1861 1922	1923 1962	1934 1968	1945 1974	1956 1985	1962 2002	1978		
1829 1869	1834 1885	1840 1896	1851 1897	1862 1923	1924 1963	1935 1969	1946 1975	1957 1986	1963 2003	1979		
1830 1870	1835 1886	1841 1897	1852 1898	1863 1924	1925 1964	1936 1970	1947 1976	195				

DAY OF			Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.	SUN ENTERS AQUARIUS 20d. 0h. M.		Rises.	Sets.	of the Year.	to end of Year.
1	*	M	Circumcision.		8 8	3 59	1	364
2		Tu	<i>For Special High Tides, see p. 20.</i>		8 8	4 0	2	363
3		W	* <i>For use of this Column, showing Daily Darkness and Moonlight, see note at end of p. 10.</i>		8 8	4 1	3	362
4		Th	Robert Smirke, R.A., died, 1845.		8 8	4 3	4	361
5		F	Epiphany. Old Christmas Day. Twelfth Day.		8 8	4 4	5	360
6		S			8 7	4 5	6	359
7		S	First Sunday after Epiph. Earl Kimberley b. '26.		8 7	4 6	7	358
8		M	<i>St. Lucian.</i> Camb. Lent Tm. beg. Plough Monday.		8 6	4 8	8	357
9		Tu	Napoleon III. died, 1873.		8 6	4 9	9	356
10		W	Sir Hudson Lowe, Napoleon's gaoler, died, 1844.		8 5	4 10	10	355
11		Th	HILARY LAW SITTINGS BEGIN.		8 5	4 12	11	354
12		F	Lord Houghton, Irish Viceroy, born, 1858.		8 4	4 13	12	353
13		S	<i>St. Hilary.</i> Jno. Scott, Earl of Eldon, d. 1838.		8 3	4 15	13	352
14		S	Second Sunday after Epiphany.		8 2	4 16	14	351
15		M	Oxford Lent Term begins.		8 2	4 18	15	350
16		Tu	Edward Gibbon d. 1794. Battle of Corunna, 1809.		8 1	4 19	16	349
17		W	<i>St. Anthony.</i> Battle of Abou Klea, 1885.		8 0	4 21	17	348
18		Th	<i>St. Prisca.</i> German Empire proclaimed, 1871.		7 59	4 23	18	347
19		F	Horace Vernet d. '63. P.J. Proudhon, socialist, d. '65.		7 58	4 24	19	346
20		S	<i>St. Fabian.</i> David Garrick d. 1779.		7 57	4 26	20	345
21		S	Septuagesima Sun. <i>St. Agnes.</i> Ashantee War, '24.		7 56	4 27	21	344
22		M	<i>St. Vincent.</i> Mooltan taken, 1849, siege 20 days.		7 54	4 29	22	343
23		Tu	Duke of Edinburgh married, 1874.		7 53	4 31	23	342
24		W	First Protestant service in Madrid, 1869.		7 52	4 33	24	341
25		Th	Conversion of St. Paul. Bp. Exeter b. 1825.		7 51	4 34	25	340
26		F	Edward Jenner, disc. of vaccination, d. 1823.		7 49	4 36	26	339
27		S	German Emperor (William II.) born, 1859.		7 48	4 38	27	338
28		S	Sexagesima Sunday. Lord Stalbridge b. 1837.		7 47	4 40	28	337
29		M	George III. died, 1820. L. Racine died, 1763.		7 45	4 42	29	336
30		Tu	K. Charles I. beheaded, 1649. C. Bradlaugh d. 1891.		7 44	4 43	30	335
31		W	Young Pretender died, 1788.		7 42	4 45	31	334

PHASES OF THE MOON.

● New Moon 7d. 3h. 7m. Morning.
 ☾ First Quarter 15 9 Morning.
 ○ Full Moon 21 3 11 Afternoon.
 ☾ Last Quarter 28 4 51 Afternoon.
 Apogee 5d. 0h. A. 252,600 | Perigee 20d. 3h. A. 222,700

RAINFALL IN JANUARY, 1893.

In this month rain fell on 14 days. The total fall for the month was 1.44 inch; below the average of ten years, 1871-80, by 0.70 inch.

MONTHLY NOTES.

January 1. — Holiday on Stock Exchange; Bank Holiday in Scotland.—Dog and establishment licences renewable.

2. Quarter Sessions begin.

5. Dividends on Consols, &c., due.

9. Christmas Fire Insurances must be paid.

31. Last day for property owners to claim votes for election of Guardians.

THE SUN.

Day.	After Clock	Hourly Varia- tion of Equa- tion of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Sth.) at Noon.	Hourly Varia- tion $\odot$'s Declination.	Sideral Time at Noon.
	M. S.	S.	H. M. S.	S.	° ' "	"	H. M. S.
1	3 53	1'18	18 48 22	11'04	22 59 23	12'7	18 44 29
2	4 21	1'17	18 52 45	11'03	22 54 3	13'9	18 48 26
3	4 49	1'15	18 57 11	11'01	22 48 16	15'0	18 52 23
4	5 16	1'13	19 1 35	10'99	22 42 2	16'2	18 56 19
5	5 43	1'12	19 5 59	10'98	22 35 20	17'3	19 0 16
6	6 10	1'10	19 10 22	10'96	22 28 12	18'4	19 4 12
7	6 36	1'08	19 14 44	10'94	22 20 37	19'5	19 8 9
8	7 1	1'05	19 19 7	10'91	22 12 36	20'6	19 12 5
9	7 26	1'03	19 23 28	10'89	22 4 9	21'7	19 16 2
10	7 51	1'01	19 27 49	10'87	21 55 16	22'8	19 19 58
11	8 15	0'98	19 32 10	10'84	21 45 57	23'8	19 23 55
12	8 38	0'96	19 36 29	10'81	21 36 13	24'9	19 27 52
13	9 0	0'93	19 40 49	10'79	21 26 3	25'9	19 31 48
14	9 22	0'90	19 45 7	10'76	21 15 29	26'9	19 35 45
15	9 44	0'87	19 49 25	10'73	21 4 31	27'9	19 39 42
16	10 4	0'84	19 53 42	10'70	20 53 8	28'9	19 43 38
17	10 24	0'81	19 57 58	10'67	20 41 22	29'9	19 47 34
18	10 43	0'78	20 2 14	10'64	20 29 12	30'9	19 51 31
19	11 2	0'75	20 6 29	10'61	20 16 39	31'9	19 55 27
20	11 19	0'72	20 10 43	10'58	20 3 44	32'8	19 59 24
21	11 36	0'69	20 14 57	10'54	19 50 26	33'7	20 3 21
22	11 52	0'65	20 19 9	10'51	19 36 46	34'6	20 7 17
23	12 7	0'62	20 23 21	10'48	19 22 44	35'5	20 11 14
24	12 22	0'59	20 27 32	10'45	19 8 21	36'4	20 15 10
25	12 36	0'56	20 31 43	10'41	18 53 36	37'3	20 19 7
26	12 49	0'52	20 35 52	10'38	18 38 31	38'1	20 23 3
27	13 1	0'49	20 40 1	10'35	18 23 6	39'0	20 27 0
28	13 12	0'46	20 44 9	10'31	18 7 20	39'8	20 30 56
29	13 23	0'42	20 48 16	10'28	17 51 15	40'6	20 34 53
30	13 33	0'39	20 52 22	10'25	17 34 51	41'4	20 38 50
31	13 42	0'36	20 56 28	10'21	17 18 8	42'2	20 42 46

METEOROLOGICAL OBSERVATIONS, JANUARY, 1893.

Day.	TEMPERATURE.			BAROM. Mean.	RAIN. FALL. inches.	SUN. SHINE. hours.	WIND.	
	Maximum.	Minimum.	Avg. 50 Yrs.				(Pressure lbs. to foot.)	
1	29'4	19'0	37	29'719	0'04	0'3	NE	1'5
2	27'6	19'5	37	29'846	0'00	1'4	N	2'3
3	30'9	18'2	37	30'013	0'01	...	WSW	1'0
4	28'7	17'9	36	30'225	0'00	...	NW	0'0
5	26'3	13'9	36	30'198	0'00	...	calm	0'0
6	31'6	26'3	36	29'980	0'00	0'2	E	0'5
7	32'7	26'5	36	29'682	0'05	...	E	1'0
8	34'0	32'4	36	29'331	0'17	...	E	1'4
9	37'4	34'0	36	29'587	0'32	...	ENE	0'3
10	40'1	32'7	36	29'890	0'00	1'0	NE	1'6
11	36'6	30'7	36	30'106	0'00	3'1	NNE	1'3
12	35'8	33'2	36	30'023	0'05	...	NNE	1'8
13	39'4	33'3	36	29'842	0'00	...	WNW	1'6
14	38'0	32'0	36	29'523	0'00	...	NW	5'4
15	32'0	23'0	36	30'031	0'00	3'0	N	3'4
16	38'8	23'3	37	29'583	0'23	...	SSW	1'8
17	37'5	28'6	37	29'775	0'07	...	SSE	0'6
18	44'1	27'1	37	30'032	0'15	...	WSW	1'2
19	41'2	35'7	37	30'239	0'00	...	SW	0'0
20	42'1	37'0	37	30'199	0'00	...	WNW	1'7
21	42'3	34'0	37	30'196	0'00	...	WNW	7'3
22	41'1	33'0	37	30'186	0'03	...	SW	1'3
23	49'7	40'8	38	29'921	0'00	...	W	2'4
24	47'3	43'1	38	29'960	0'00	...	SW	2'2
25	45'0	33'6	38	29'996	0'00	...	SW	1'6
26	45'6	37'5	38	29'690	0'16	...	S	2'2
27	40'4	31'6	38	29'859	0'00	0'3	N	1'5
28	44'5	36'2	38	29'594	0'01	4'2	SSE	2'7
29	50'3	41'0	38	29'369	0'11	...	SSW	4'2
30	51'4	40'1	38	29'865	0'00	0'1	SSW	4'6
31	52'2	45'9	38	29'790	0'03	...	SW	4'4

THE MOON.

Day of M.	Rises Morning.			Sets Afternoon.			Souths Morning.			Right Ascension at Noon.			Declination at Noon.			Horizontal Parallax at Noon.			Semi-diameter at Noon.			Age at Noon.		
	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	d.	h.	m.
1	2	47	0	11	7	35	14	27	10	16	44	25	54	49	14	58	24	4	12	034				
2	4	2	0	27	8	19	15	14	35	21	7	2	54	24	14	51	25	4	20	134				
3	5	16	0	49	9	6	16	4	22	24	35	30	54	8	14	46	26	4	13	042				
4	6	26	1	19	9	55	16	55	33	26	59	39	53	58	14	44	27	4	32	10				
5	7	31	1	59	10	46	17	48	38	28	10	55	53	55	14	43	28	4	42	01				
6	8	24	2	52	11	37	18	42	18	28	4	12	53	58	14	44	29	4	42	30				
7	9	3	3	58		aft.	19	35	26	26	39	25	54	6	14	46	0	9	40	23				
8	9	33	5	10	1	17	20	27	2	24	1	39	54	19	14	49	1	9	42	03				
9	9	53	6	26	2	4	21	16	35	20	19	52	54	36	14	54	2	9	42	13				
10	10	8	7	41	2	49	22	4	31	15	45	12	54	58	15	0	3	9	43	02				
11	10	21	8	56	3	32	22	49	52	10	29	21	55	25	15	8	4	9	43	10				
12	10	33	10	11	4	14	23	34	59	4	43	53	56	0	15	17	5	9	32	10				
13	10	43	11	27	4	57	0	19	56	1	19	35	56	40	15	28	6	9	32	04				
14	10	55	mrn.		5	41	1	6	21	7	28	30	57	24	15	40	7	9	10	324				
15	11	7	0	45	6	28	1	55	22	13	27	54	58	13	15	53	8	9	2	1	034			
16	11	25	2	10	7	21	2	48	18	18	58	40	59	3	16	7	9	9	2	0134				
17	11	48	3	39	8	19	3	46	12	23	36	25	59	50	16	20	10	9	13	024				
18	aft.		3	3	9	22	4	49	18	26	52	24	60	3	16	31	11	9	30	124				
19	1	18	6	31	10	29	5	56	27	28	19	5	60	59	16	39	12	9	32	104				
20	2	33	7	36	11	36	7	4	58	27	39	47	61	11	16	42	13	9	32	014				
21	4	5	8	23	mrn.		8	11	34	24	56	58	61	4	16	40	14	9	14	032				
22	5	38	8	53	0	40	9	13	54	20	31	47	60	36	16	33	15	9	40	123				
23	7	10	9	14	1	37	10	11	14	55	26	59	56	16	22	16	9	9	42	03				
24	8	36	9	30	2	39	11	3	54	8	39	30	59	4	16	7	17	9	41	03				
25	9	57	9	42	3	18	11	53	11	2	10	36	58	7	15	52	18	9	43	12				
26	11	15	9	53	4	3	12	40	22	4	10	53	57	9	15	36	19	9	43	20				
27	mrn.		10	5	4	47	13	26	40	10	9	43	56	16	15	21	20	9	43	20				
28	0	32	10	15	5	31	14	13	11	15	33	56	55	30	15	9	21	9	41	032				
29	1	48	10	31	6	15	15	0	49	20	13	16	54	53	14	59	22	9	40	123				
30	3	5	10	51	7	2	15	50	8	23	58	6	54	26	14	52	23	9	21	043				
31	4	17	11	17	7	50	16	41	20	26	39	13	54	9	14	47	24	9	10	34				

APPARENT RIGHT ASCENSION OF THE P
PLANETS AT MEAN NOON

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

D.	♂ MERCURY.			♀ VENUS.			♂ MARS.			♂ JUPITER.			♂ SATURN.		
	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.	h.	m.	s.
1	17	38	39	21	50	31	15	52	44	3	18	24	13	33	28
6	18	11	14	22	2	38	16	6	54	3	17	34	13	34	27
11	18	44	52	22	12	23	16	21	15	3	17	5	13	35	18
16	19	19	16	22	19	23	16	35	46	3	16	57	13	35	58
21	19	54	10	22	23	11	16	50	25	3	17	10	13	36	30
26	20	29	22	22	23	23	17	5	14	3	17	43	13	36	51
31	21	4	40	22	19	46	17	20	9	3	18	37	13	37	2

APPARENT DECLINATION OF THE ABOVE PLANETS.

D.	♂ MERCURY.			♀ VENUS.			♂ MARS.			♂ JUPITER.			♂ SATURN.		
	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
1	23	25	108	13	18	38	19	56	346	17	17	31	7	8	36s
6	24	4	12	11	25	25	20	40	22	17	15	45	7	13	0
11	24	12	27	9	36	8	21	19	57	17	15	20	7	16	28
16	23	47	14	7	53	47	21	55	6	17	16	5	7	18	59
21	22	46	31	6	22	33	22	25	37	17	18	31	7	20	33
26	21	8	43	5	7	16	22	51	20	17	22	5	7	21	9
31	18	52	54s	4	12	51s	23	12	5s	17	26	54n	7	20	47s

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	♂ MERCURY.			♀ VENUS.			♂ MARS.			♂ JUPITER.			♂ SATURN.		
	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
5	9	0		6	5		19	5		4	1		2	0	
15	9	0		6	3		22	8		4	3		2	0	
25	9	0		6	2		26	7		4	4		1	0	

SEMI-DIAMETER OF SUN AND PLANETS.

D.	♂ MERCURY.			♀ VENUS.			♂ MARS.			♂ JUPITER.			♂ SATURN.		
	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"
16	18			2	5		18	3		2	6		21	0	
16	18			2	4		21	4		2	7		20	4	
16	17			2	4		25	1		2	8		19	7	

Mean Longitude of Moon's Ascending Node, January 1, 15° 9' T.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

January 1. Day breaks at 6h. 2m. morn., and Twilight ends at 6h. 6m. aft., the length of the Day being 7h. 51m.

Jan. 3. Occultation reappearance of B.A.C. 5286; mag. 6½. The reappearance takes place at 5h. 58m. morn., 319° from the vertex.

Jan. 5. Mean time of Sun's semi-diameter passing the meridian, 1m. 10½s.

Jan. 10. Venus in conjunction with the Moon, 4h. aft. ♀ 5° 6' N.

Jan. 11. Venus at greatest brilliancy, 2h. aft.

Jan. 16. Occultation of ζ Arietis; magnitude 4½. The disappearance takes place at 9h. 23m. aft., 321° from the vertex, and the reappearance at 9h. 40m. aft., 291° from the vertex.

Jan. 16. Occultation of τ Arietis; magnitude 5. The disappearance takes place at 11h. 56m. aft., 52° from the vertex, and the reappearance on Jan. 17 at 0h. 53m. morn., 195° from the vertex.

Jan. 20. Mean time of Sun's semi-diameter passing the meridian, 1m. 9½s.

Jan. 27. A near approach of Spica Virginis to the Moon's limb at 9h. 47m. morn., 170° from the vertex.

Jan. 29. Mercury in superior conjunction with the Sun, at noon.

Jan. 30. Occultation reappearance of 42 Libræ; magnitude 5½. The reappearance takes place at 3h. 49m. morn., 330° from the vertex.

Jan. 30. Occultation reappearance of B.A.C. 5197; magnitude 6. The reappearance takes place at 7h. 25m. morn., 222° from the vertex.

In this month the Mornings increase 26m., and the Afternoons 46m.

MORNING AND EVENING STARS.

♂ MERCURY is a morning star till the 22nd, when it rises with the Sun.

♀ VENUS is an evening star. A fine object, in the South-west, on the evenings about the 11th, when it may be observed near the 4th magnitude star ζ Aquarii.

♂ MARS is a morning star; may be seen two hours before Sunrise in the South-east quarter of the heavens, about 5° north of Antares.

♂ JUPITER can be well observed in this month, about half-way between Aldebaran and α Arietis.

Souths in the early evening.

♂ SATURN in Virgo.

Day of		Time of High Water at the undermentioned Places—																	
Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar).					
		Morn. After.		Morn. After.		Morn. After.		Morn. After.		Morn. After.		Morn. After.		Morn. After.					
		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	M	9 3	9 38	6 41	7 15	1 58	2 36	1 33	2 2	7 19	7 53	10 13	10 44	6 23	6 54				
2	Tu	10 12	10 46	7 47	8 18	3 11	3 45	2 33	3 2	8 25	8 57	11 14	11 43	7 24	7 53				
3	W	11 17	11 49	8 48	9 15	4 18	4 49	3 32	4 3	9 28	9 57	...	0 12	8 24	8 52				
4	Th	...	0 18	9 40	10 2	5 17	5 44	4 31	4 56	10 24	10 48	0 38	1 1	9 20	9 45				
5	F	0 45	1 7	10 24	10 44	6 8	6 32	5 18	5 40	11 13	11 35	1 23	1 46	10 9	10 29				
6	S	1 30	1 52	11 5	11 23	6 54	7 15	6 1	6 22	11 58	...	2 7	2 27	10 48	11 4				
7	S	2 12	2 29	11 41	...	7 33	7 51	6 40	6 59	0 18	0 36	2 44	3 1	11 20	11 38				
8	M	2 46	3 3	0 0	0 18	8 9	8 26	7 17	7 35	0 55	1 13	3 18	3 34	11 55	...				
9	Tu	3 20	3 36	0 34	0 51	8 42	8 58	7 52	8 8	1 31	1 48	3 51	4 8	0 13	0 30				
10	W	3 53	4 11	1 9	1 27	9 16	9 33	8 26	8 44	2 6	2 23	4 26	4 45	0 49	1 7				
11	Th	4 29	4 46	1 44	2 0	9 49	10 5	9 1	9 18	2 40	2 56	5 3	5 19	1 26	1 43				
12	F	5 2	5 20	2 18	2 36	10 22	10 40	9 37	9 55	3 15	3 32	5 38	5 58	2 2	2 22				
13	S	5 38	5 58	2 54	3 15	10 57	11 15	10 14	10 35	3 50	4 10	6 19	6 42	2 42	3 3				
14	S	6 17	6 40	3 35	3 56	11 34	11 54	10 58	11 23	4 30	4 52	7 4	7 28	3 25	3 48				
15	M	7 2	7 26	4 20	4 47	...	0 16	11 50	...	5 14	5 38	7 53	8 23	4 13	4 42				
16	Tu	7 52	8 20	5 17	5 53	0 43	1 13	0 21	0 51	6 5	6 39	8 54	9 30	5 12	5 45				
17	W	8 54	9 31	6 33	7 12	1 49	2 28	1 24	1 58	7 14	7 50	10 7	10 42	6 19	6 52				
18	Th	10 10	10 50	7 51	8 29	3 8	3 49	2 31	3 6	8 29	9 8	11 18	11 54	7 28	8 4				
19	F	11 31	...	9 5	9 38	4 30	5 7	3 43	4 21	9 47	10 22	...	0 29	8 42	9 18				
20	S	0 8	0 42	10 6	10 32	5 42	6 12	4 54	5 22	10 53	11 23	0 59	1 27	9 50	10 17				
21	S	1 11	1 40	11 1	11 29	6 42	7 11	5 49	6 18	11 54	...	1 55	2 23	10 44	11 9				
22	M	2 9	2 34	11 55	...	7 40	8 6	6 47	7 13	0 24	0 51	2 50	3 15	11 35	11 59				
23	Tu	3 0	3 24	0 22	0 45	8 30	8 53	7 39	8 2	1 17	1 41	3 38	4 1	...	0 23				
24	W	3 47	4 10	1 8	1 30	9 14	9 35	8 24	8 46	2 4	2 26	4 24	4 46	0 47	1 9				
25	Th	4 32	4 52	1 50	2 10	9 55	10 15	9 7	9 28	2 46	3 7	5 9	5 30	1 32	1 53				
26	F	5 13	5 33	2 30	2 49	10 34	10 53	9 49	10 8	3 26	3 45	5 50	6 12	2 14	2 35				
27	S	5 52	6 11	3 7	3 26	11 10	11 26	10 27	10 47	4 3	4 22	6 33	6 54	2 55	3 15				
28	S	6 31	6 51	3 45	4 5	11 44	...	11 9	11 34	4 41	5 1	7 15	7 38	3 36	3 58				
29	M	7 12	7 34	4 28	4 54	0 3	0 24	...	0 0	5 22	5 45	8 3	8 31	4 23	4 50				
30	Tu	7 58	8 28	5 25	6 1	0 50	1 21	0 29	0 59	6 13	6 46	9 2	9 38	5 20	5 52				
31	W	9 2	9 43	6 45	7 27	1 57	2 40	1 31	2 7	7 24	8 4	10 18	10 55	6 28	7 5				

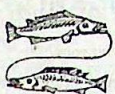
	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.	ft. in.
Springs rise	20 8	27 6	31 6	20 10	10 0	16 4	12 to 14
Neaps	17 3	20 3	22 7	16 3	8 3	12 9	9 to 11

RISING, SOUTHING, AND SETTING OF THE PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.	h. m.
1	7 13	10 54	2 47A	10 11M	3 6A	8 1A	4 52M	9 8M	1 24A	0 55A	8 32A	4 13M	1 23M	6 50M	0 17A
8	7 24M	11 12M	3 0A	9 45M	2 54A	8 3A	4 52M	9 1M	1 10A	0 28A	8 4A	3 44M	0 57M	6 24M	11 51M
15	7 43M	11 33M	3 23A	9 16M	2 38A	8 0A	4 49M	8 53M	0 57A	11 59M	7 36A	3 17M	0 31M	5 57M	11 23M
22	7 54M	11 54M	3 54A	8 43M	2 16A	7 49A	4 47M	8 46M	0 45A	11 32M	7 9A	2 50M	0 45M	5 30M	10 56M
29	7 59M	0 16A	4 33A	8 6M	1 46A	7 26A	4 43M	8 39M	0 35A	11 5M	6 42A	2 23M	11 33A	4 59M	10 29M

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.				ANGULAR DISTANCE OF THE MOON FROM ALDEBARAN.			
R. A.			DECL. N.	Position of Star.		6 P.M.	9 P.M.
D.	h. m.	s.		D.			
1	1 19	49.1	88 44 55	19	West	26 45 43	28 31 30
10	1 19	40.4	88 44 56	20	West	41 11 34	43 1 48
19	1 19	31.9	88 44 56	21	West	55 56 55	57 47 41
28	1 19	22.7	88 44 56	22	West	70 38 56	72 28 15

In the early part of the month the constellations Camelopardus, Lynx, Gemini, Monoceros, and Canis Major are on the meridian about midnight. In Gemini there is a fine compressed cluster of stars in the right leg of Pollux, in R.A. 6h. 48m., and Decl. 18° 8' N. This cluster is triangular in shape, and, in small telescopes, hardly distinguishable from a nebula. The stars composing it are small. It can be best observed on the nights immediately before and after the 7th. There is a very fine cluster in Canis Major, in R.A. 6h. 43m., and Decl. 20° 39' S. With a very small astronomical telescope the individual stars can be easily distinguished; and with a low power eyepiece, on the larger instruments, the field appears full of stars of different magnitudes.

DAY OF			Fasts and Festivals. Remarkable Days—Events. SUN ENTERS PISCES 18d. 3h. A.		THE SUN		DAYS	
M.	Light and Dark.	W.			Rises.	Sets.	of the Year.	to end of Year.
1	I	Th	<i>St. Bridget.</i> G. Cruikshank d.'78; b. Sept. 27, 1792.		7 41	4 47	32	333
2	I	F	<i>Purification B. V. Mary.</i> Candlemas.		7 39	4 49	33	332
3	I	S	<i>St. Blaise.</i> Marquis of Salisbury born, 1830.		7 38	4 51	34	331
4	I	S	<i>Quinquagesima.</i> Shrove Sunday. <i>Carnival.</i>		7 36	4 52	35	330
5	I	M	<i>St. Agatha.</i> Sir Robert Peel born, 1788.		7 34	4 54	36	329
6	I	Tu	Shrove Tuesday. Henry Irving born, 1838.		7 33	4 56	37	328
7	I	W	<i>Ash Wednesday.</i> London & Dover Ry. op. '44.		7 31	4 58	38	327
8	I	Th	Half-Quarter Day. Cetewayo died, 1884.		7 29	5 0	39	326
9	I	F	Dean Gregory born, 1819. Sir E. Wood b. 1838.		7 27	5 2	40	325
10	I	S	Queen Victoria married, 1840.		7 26	5 3	41	324
11	I	S	<i>Quadragesima.</i> First Sunday in Lent.		7 24	5 5	42	323
12	I	M	London Custom House burnt, 1814.		7 22	5 7	43	322
13	I	Tu	Lord Randolph Churchill born, 1849.		7 20	5 9	44	321
14	I	W	<i>St. Valentine.</i> Old Candlemas. Ember Day.		7 18	5 11	45	320
15	I	Th	Sir E. Clarke b. 1841. Ld. Sidmouth d. 1844.		7 16	5 13	46	319
16	I	F	Lindley Murray, grammarian, d. 1826. Emb. D.		7 14	5 14	47	318
17	I	S	Duchess of Albany b. 1861. Ember Day.		7 12	5 16	48	317
18	I	S	<i>Second Sunday in Lent.</i> [24 May, 1543.]		7 10	5 18	49	316
19	I	M	N. Copernicus, astronomer, b. 1473; d. (about		7 8	5 20	50	315
20	I	Tu	Duchess of Fife b. 1867; marr. 27 July, 1889.		7 6	5 22	51	314
21	I	W	John P. Hullah, musical teacher, died, 1884.		7 4	5 23	52	313
22	I	Th	George Washington born, 1732; d. 14 Dec. 1799.		7 2	5 25	53	312
23	I	F	C. Shirley Brooks d. 1874; John Keats d. 1821.		7 0	5 27	54	311
24	I	S	<i>St. Matthias, Ap. & M.</i> Rev. T. Binney d. 1874.		6 58	5 29	55	310
25	I	S	<i>Third Sunday in Lent.</i>		6 56	5 31	56	309
26	I	M	Treaty of Versailles, 1871.		6 54	5 32	57	308
27	I	Tu	H. W. Longfellow b. 1807; d. 24 March, 1882.		6 51	5 34	58	307
28	I	W	Tichborne trial ended, '74. R. Hurrell Frouded. '36.		6 49	5 36	59	306

PHASES OF THE MOON.

- New Moon 5d. 9h. 45m. Afternoon.
- ☾ First Quarter 13 10 43 Morning.
- ☾ Full Moon 20 2 16 Morning.
- ☾ Last Quarter 27 0 28 Afternoon.

Apogee 1d. 10h. A. 252,300 Perigee 17d. 9h. A. 225,600

The Moon is distant 238,840 miles, see explanation, p. 80.

RAINFALL IN FEBRUARY, 1893.

In this month rain fell on 22 days. The total fall for the month was 2.72 inches; above the average of ten years, 1871-80, by 1.11 inch.

MONTHLY NOTES.

- Feb. 1. Partridge and pheasant shooting ends.
- 2. Candlemas: Scottish Quarter Day.
- 11. Scottish general salmon-fishing begins.
- 14. Last day for objecting to owners' claims to vote in election of Guardians.
- 28. Last day for Companies to name their officer to vote for Guardians.—Hare-hunting ends.

IRON-MASTERS' QUARTERLY MEETINGS, 1894

	Jan.	April.	July.	Oct.
Walsall	9	10	10	9
Wolverhampton ...	10	11	11	10
Birmingham	11	12	12	11
Stourbridge	12	13	13	12
Dudley	13	14	14	13

THE SUN.

Day.	Arct. Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (6th.) at Noon.	Hourly Variation (S.) of Declination.	Sidereal Time at Noon.
	M. S.	S.	H. M. S.	S.	° ' "	" "	H. M. S.
1	13 50	0'32	21 0 32	10'18	17 1 7	42'9	20 46 43
2	13 57	0'29	21 4 30	10'15	16 43 47	43'7	20 50 39
3	14 4	0'26	21 8 39	10'11	16 26 11	44'4	20 54 36
4	14 9	0'22	21 12 42	10'08	16 8 17	45'1	20 58 32
5	14 14	0'19	21 16 43	10'04	15 50 6	45'9	21 2 29
6	14 18	0'15	21 20 44	10'01	15 31 39	46'5	21 6 25
7	14 22	0'12	21 24 44	9'98	15 12 56	47'1	21 10 22
8	14 24	0'09	21 28 43	9'94	14 53 58	47'7	21 14 19
9	14 26	0'05	21 32 41	9'91	14 34 44	48'4	21 18 15
10	14 27	0'02	21 36 38	9'88	14 15 16	49'0	21 22 12
11	14 27	0'01	21 40 35	9'84	13 55 34	49'5	21 26 8
12	14 26	0'04	21 44 31	9'81	13 35 39	50'1	21 30 5
13	14 25	0'08	21 48 26	9'78	13 15 30	50'6	21 34 1
14	14 23	0'11	21 52 20	9'75	12 55 8	51'2	21 37 58
15	14 20	0'14	21 56 14	9'72	12 34 34	51'7	21 41 54
16	14 16	0'17	22 0 7	9'69	12 13 48	52'2	21 45 51
17	14 11	0'20	22 3 59	9'66	11 52 50	52'6	21 49 48
18	14 6	0'23	22 7 50	9'63	11 31 41	53'1	21 53 44
19	14 0	0'26	22 11 41	9'60	11 10 22	53'5	21 57 41
20	13 54	0'28	22 15 31	9'57	10 48 52	53'9	22 1 37
21	13 47	0'31	22 19 21	9'54	10 27 12	54'4	22 5 34
22	13 39	0'34	22 23 9	9'52	10 5 23	54'8	22 9 30
23	13 30	0'36	22 26 57	9'49	9 43 24	55'1	22 13 27
24	13 22	0'39	22 30 45	9'47	9 21 16	55'5	22 17 23
25	13 12	0'41	22 34 32	9'44	8 59 0	55'9	22 21 17
26	13 2	0'43	22 38 18	9'42	8 36 35	56'2	22 25 20
27	12 51	0'46	22 42 4	9'40	8 14 3	56'5	22 29 13
28	12 40	0'48	22 45 50	9'38	7 51 24	56'8	22 33 10

METEOROLOGICAL OBSERVATIONS, FEBRUARY, 1893.

Day.	TEMPERATURE.			BAROM. Mean.	RAIN. FALL.	SUN. SHINE.	WIND.	
	Maximum.	Minimum.	Avg. 50 Yrs.				Directn.	Pressure.
	°.	°.	°.	inches.*	inches.	hours.	SW	lbs. 9'7
1	47'4	39'8	38	29'722	0'22	2'2	WSW	10'0
2	54'2	39'8	38	29'780	0'12	...	SE	0'3
3	45'4	41'5	38	30'094	0'06	...	ESE	0'6
4	43'5	31'3	38	30'212	0'00	7'0		
5	39'5	25'4	39	30'231	0'00	4'5	SE	0'2
6	42'4	23'1	39	30'194	0'00	5'7	S	0'8
7	52'4	38'2	39	30'051	0'03	3'9	SW	1'4
8	48'7	34'5	39	29'731	0'01	1'9	SW	7'2
9	48'1	33'6	39	29'602	0'11	...	SW	9'0
10	51'1	40'2	39	29'315	0'01	1'2	W	13'0
11	52'0	37'3	39	29'482	0'09	0'1	SW	4'3
12	43'8	32'2	39	29'592	0'03	0'7	WSW	5'2
13	48'8	33'4	39	29'511	0'04	0'1	SW	3'5
14	52'4	40'8	39	29'205	0'13	...	SSW	9'0
15	49'9	36'7	39	29'502	0'02	...	SSE	1'4
16	50'9	39'1	39	29'474	0'01	0'6	S	3'4
17	48'1	35'0	39	29'871	0'05	4'1	S	1'6
18	55'1	43'0	39	29'874	0'00	0'1	SSW	4'0
19	58'8	46'1	39	29'596	0'11	6'0	SSW	1'6
20	50'3	39'0	39	29'345	0'04	2'4	S	4'1
21	47'4	39'2	39	28'561	0'52	...	SW	2'6
22	39'2	34'2	39	28'900	0'31	...	NW	2'4
23	35'8	31'7	39	29'308	0'03	...	NNE	1'9
24	37'1	30'5	39	29'117	0'00	0'1	ENE	0'5
25	41'7	29'2	40	29'146	0'00	1'7	N	0'6
26	47'6	35'5	40	28'777	0'48	1'2	S	11'5
27	42'2	35'0	40	29'169	0'29	...	SE	2'6
28	47'1	32'9	40	29'745	0'01	7'2	NE	0'6

* The Meteorological Observations throughout the Almanack are those recorded at the Royal Observatory, Greenwich. They include the highest and lowest readings of the *Thermometer* with the average for 50 years; the mean of *Barometer* at a height of 159 feet above the mean level of the sea; the daily *Rainfall*, the daily *Sunshine*; the general direction and maximum force of the *Wind*, also daily.

THE MOON.

Day of M.	Rises Morning.	Sets Morning.	Souths Morning.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 9h. p.m.
h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	
1	6 25	11 55	11 55	8 41	17 34	7 28	8 30	54 14	45 25 9
2	6 21	11 55	11 55	9 32	18 27	45 28	20 29	54 14	45 26 9
3	7 3	1 47	10 23	19 21	10 27	13 40	54 10	14 47	27 9
4	7 36	2 57	11 13	20 13	24 51	23 24	51 23	54 23	14 51 23 9
5	7 59	4 13	11 21	3 47	21 21	17 54	42 14	56 29	9 10 234
6	8 16	5 29	0 47	21 52	7 16	53 57	55 4 15	2 0 14	21 043
7	8 29	6 46	1 31	22 38	42 11	41 32	55 29	15 9 1 14	42 013
8	8 41	8 2	2 14	23 24	8 5	56 47	55 55	16 2 14	43 02
9	8 51	9 18	2 56	0 9	17 0	7 17	56 26	15 24 3 14	44 31 0
10	9 2	10 34	3 39	0 55	12 6	17 5	56 58	15 33 4 14	43 01
11	9 14	11 56	4 25	1 43	1 12	17 40	57 32	15 42 5 14	41 02
12	9 29	mn.	5 15	2 33	56 17	51 39	58 7 15	52 6 14	40 123
13	9 49	1 22	6 9	3 28	57 22	38 15	58 43	16 2 7 14	42 103
14	10 18	2 49	7 8	4 28	36 26	13 32	59 18	16 11 8 14	42 013
15	11 3	4 11	8 11	5 32	21 28	13 9	59 48	16 19 9 14	30 42
16	aft.	5 22	9 17	6 38	25 28	18 35	60 10	16 25 10 14	31 024
17	1 29	6 16	10 20	7 44	8 26	24 21	60 22	16 29 11 14	32 014
18	3 2	6 51	11 20	8 47	3 22	41 20	60 20	16 28 12 14	13 024
19	4 33	7 15	mn.	9 45	50 17	33 2	60 4 16	24 13 14	10 1234
20	6 4	7 32	0 14	10 40	25 11	28 26	59 34	16 16 14 14	21 034
21	7 28	7 45	1 5	11 31	33 4	55 48	58 53	16 4 15 14	20 134
22	8 49	7 58	1 52	12 20	21 1	40 31	58 45	15 51 16 14	31 024
23	10 9	8 9	2 37	13 7	58 8	0 50	57 13	15 37 17 14	23 024
24	11 29	8 21	3 22	13 55	29 13	49 30	56 23	15 23 18 14	32 014
25	mn.	8 36	4 8	14 43	47 18	53 49	55 38	15 11 19 14	41 02
26	0 47	8 52	4 54	15 33	29 23	3 1	55 11	15 120 14	40 132
27	2 3	9 17	5 43	16 24	49 26	7 42	54 33	14 53 21 14	41 023
28	3 12	9 50	6 33	17 17	38 28	0 108	54 16	14 49 22 14	42 013

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
5	21 39 48	22 12 27	17 35 12	3 19 50	13 37 4
10	22 14 20	22 2 7	17 50 12	3 21 23	13 36 55
15	22 47 19	21 50 7	18 5 30	3 23 14	13 36 37
20	23 16 46	21 38 19	18 20 44	3 25 21	13 36 9
25	23 39 23	21 28 37	18 35 59	3 27 46	13 35 32

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
5	15 59 8s	3 43 54s	23 27 42s	17 32 54n	7 19 27s
10	12 29 57	3 43 11	23 38 5	17 40 2	7 17 12
15	8 33 12	4 9 43	23 43 8	17 48 12	7 14 1
20	4 27 18	4 57 46	23 42 51	17 57 18	7 9 58
25	0 45 32s	5 57 46s	23 37 11s	18 7 14n	7 5 6s

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	☉	♂	♀	♂	♂	♂
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
5	9 0	6 5	30 8	4 6	1 8	1 0
15	9 0	7 4	32 3	4 8	1 0	1 0
25	8 9	9 3	30 7	5 0	1 7	1 0

SEMI- DIAMETER OF SUN AND PLANETS.

☉	♂	♀	♂	♂	♂
h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
16 15	2 5	28 9	2 9	19 1	8 1
16 13	2 8	30 3	3 0	18 4	8 2
16 11	3 5	28 9	3 2	17 9	8 3

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

February 1. Day breaks at 5h. 42m. morn., and Twilight ends at 6h. 46m. aft., the length of the Day being 9h. 6m.

Feb. 1. Mars in conjunction with the Moon, 7h. morn. δ 4° 41' N.

Feb. 5. Venus at least distance from the Sun at Noon.

Feb. 5. Mean time of Sun's semidiameter passing the meridian, 1m. 76s.

Feb. 6. Mercury in conjunction with the Moon, 9h. morn. δ 2° 7' N.

Feb. 9. Occultation, Disappearance of 44 Piscium; magnitude 6. The disappearance takes place at 6h. 37m. aft., 330° from the vertex.

Feb. 16. Venus in inferior conjunction with the Sun, 9h. morn.

Feb. 20. Mean time of Sun's semidiameter passing the meridian, 1m. 60s.

Feb. 24. Saturn in conjunction with the Moon, 2h. morn. δ 4° 23' N.

Feb. 24. Mercury at least distance from the Sun, 6h. morn.

Feb. 26. Mercury at greatest elongation (18°) East, 2h. morn.

In this month the Mornings increase 52m., and the Afternoons 49m.

MORNING AND EVENING STARS.

♂ MERCURY is an evening star throughout the month. May be observed about the 25th. After Sunset, in the South-west, a little South of the 4th magnitude star α Piscium.

♀ VENUS is an evening star in the early part of the month; a morning star from about the 12th. May be observed on the 25th, rising rather more than an hour before the Sun, near to the star β Aquarii.

♂ MARS is a morning star throughout the month, and may be found on the 15th about 3° below μ Sagittarii.

♂ JUPITER has moved very little from the position it occupied last month. Is slowly moving towards Aldebaran.

♂ SATURN in much the same position as last month. May be seen to the North-east of Spica Virginis.

Mean Longitude of Moon's ascending Node, February 1, 13° 31' T.

Time of High Water at the undermentioned Places—

Day of		LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar).	
Month.	Week.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
1	Th	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
2	F	10 25	11 7	8 8	8 8	3 23	4 6	2 44	3 23	8 46	9 25	11 35	...	7 45	8 21
3	S	11 47	...	9 19	9 48	4 46	5 20	4 0	4 34	10 0	10 32	0 43	...	8 55	9 27
4	S	0 22	0 52	10 12	10 32	5 52	6 17	5 4	5 28	10 57	11 20	1 10	1 33	9 54	10 16
5	S	1 16	1 37	10 50	11 9	6 39	7 0	5 48	6 7	11 41	...	1 53	2 13	10 35	10 52
6	M	1 58	2 16	11 27	11 44	7 19	7 37	6 25	6 44	0 1	0 21	2 31	2 48	11 8	11 24
7	Tu	2 33	2 49	...	0 0	7 55	8 11	7 2	7 18	0 39	0 56	3 5	3 20	11 40	11 40
8	W	3 5	3 21	0 17	0 34	8 26	8 42	7 34	7 52	1 12	1 30	3 35	3 51	...	0 55
9	Th	3 37	3 52	0 50	1 7	8 58	9 14	8 8	8 24	1 47	2 4	4 7	4 24	0 29	0 46
10	F	4 4	4 25	1 24	1 39	9 30	9 45	8 40	8 56	2 20	2 35	4 40	4 56	1 3	1 19
11	S	4 41	4 57	1 55	2 11	10 0	10 16	9 12	9 29	2 51	3 7	5 14	5 30	1 37	1 54
12	S	5 13	5 30	2 28	2 44	10 32	10 48	9 47	10 3	3 24	3 40	5 48	6 7	2 12	2 30
13	M	5 46	6 6	3 2	3 22	11 5	11 22	10 22	10 43	3 58	4 18	6 27	6 50	2 50	3 11
14	Tu	6 28	6 49	3 43	4 7	11 42	...	11 7	11 36	4 39	5 2	7 13	7 39	3 34	3 59
15	W	7 14	7 42	4 36	5 11	0 4	0 32	...	0 9	5 29	6 0	8 12	8 48	4 31	5 7
16	Th	8 15	8 54	5 52	6 43	1 7	1 48	0 46	1 24	6 38	7 23	9 29	10 17	5 45	6 27
17	F	9 41	10 13	7 35	8 21	2 38	3 31	2 6	2 51	8 12	9 0	11 3	11 47	7 13	7 57
18	S	11 20	...	9 3	9 39	4 21	5 4	3 36	4 18	9 44	10 23	...	0 27	8 39	9 18
19	S	0 5	0 43	10 7	10 31	5 43	6 13	4 55	5 23	10 53	11 21	1 1	1 28	9 50	10 16
20	M	1 11	1 39	10 56	11 20	6 40	7 6	5 47	6 12	11 48	...	1 54	2 18	10 39	11 0
21	Tu	2 4	2 26	11 43	...	7 30	7 53	6 37	7 1	...	0 38	2 41	3 3	11 22	11 43
22	W	2 48	3 8	0 4	0 26	8 14	8 34	7 22	7 43	1 0	1 21	3 23	3 42	...	0 3
23	Th	3 28	3 47	0 45	1 4	8 53	9 11	8 3	8 21	1 42	2 1	4 2	4 21	0 23	0 43
24	F	4 6	4 25	1 23	1 41	9 30	9 47	8 40	8 58	2 20	2 37	4 40	4 58	1 3	1 21
25	S	4 43	4 59	1 57	2 14	10 2	10 19	9 14	9 32	2 53	3 10	5 16	5 33	1 39	1 57
26	S	5 16	5 32	2 30	2 46	10 34	10 49	9 49	10 5	3 26	3 42	5 50	6 9	2 14	2 32
27	M	5 48	6 6	3 2	3 20	11 4	11 20	10 22	10 42	3 58	4 17	6 28	6 49	2 50	3 10
28	Tu	6 25	6 45	3 39	4 0	11 37	11 57	11 5	11 30	4 35	4 55	7 10	7 33	3 30	3 53
29	W	7 7	7 33	4 27	5 2	...	0 23	...	0 0	5 19	5 51	8 3	8 39	4 22	4 58

* The days thus indicated throughout the Almanack are those on which High Tides may be expected. Strong northerly winds in the North Sea and a low barometer with heavy rains in the counties drained by the Thames, will probably cause a higher rise of the river and the low-lying riverside districts to be flooded. See Tides, p. 71.

RISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ♀			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
5	7 57M	0 37A	5 17A	7 26M	1 10A	6 54A	4 40M	8 33M	0 26A	10 38M	6 16A	1 58M	11 6A	4 36M	10 2M
12	7 51M	0 58A	6 5A	6 43M	0 27A	6 11A	4 35M	8 26M	0 17A	10 12M	5 51A	1 34M	10 37A	4 8M	9 35M
19	7 37M	1 14A	6 51A	6 4M	11 43M	6 22A	4 29M	8 20M	0 11A	9 45M	5 26A	1 11M	10 9A	3 40M	9 7M
26	7 14M	1 17A	7 20A	5 30M	11 2M	4 34A	4 22M	8 14M	0 6A	9 20M	5 2A	0 48M	9 39A	3 12M	8 40M

APPARENT RIGHT ASCENSION AND DECLINATION of the POLE STAR.

D.	R. A.	DECL. N.
1	1 19 19.3	88 44 56
10	1 19 10.7	88 44 55
19	1 19 3.6	88 44 54
28	1 18 57.3	88 44 52

ANGULAR DISTANCE of the MOON FROM REGULUS.

D.	Position of Star.	6 P.M.		9 P.M.		Midnight.	
		°	'	°	'	°	'
1	East	89	20	87	35	85	50
10	East	75	15	73	29	71	42
19	East	60	55	59	6	57	18
28	East	46	22	44	32	42	42

In the early part of this month the constellations Ursa Major, Lynx, Cancer, and a part of Hydra are on the meridian about midnight. In Cancer there is a very beautiful cluster of stars situated in the Crab's southern claw, in R.A. 8h. 45m. 18s., and Decl. 12° 13' N., consisting of some 200 stars from the 8th to 13th magnitudes, loosely aggregated, without a common centre. The fine group of stars in Cancer, called "Praesepe," can be best observed

in this month. It does not consist of a very great number of stars, but the components are, as compared with those of other clusters, of considerable magnitude. It is situated in R.A. 8h. 34m., and Decl. 20° 20' N., between the stars δ and γ Cancri.

The triple star ζ in Cancer may be examined in this month: it will be found situated in R.A. 8h. 6m. 18s., and Decl. 18° 1' N. Two of the stars are only 1" apart, and the third about 5" from them.



Fasts and Festivals. Remarkable Days—Events.

SUN ENTERS ARIES 20d. 3h. A.
SPRING COMMENCES.



DAY OF			THE SUN	DAYS
M.	Light and Dark	W.	Rises.	of the Year.
1	Th	St. DAVID'S DAY.	6 47	60
2	F	John Wesley d. 1791. Pope Leo XIII. b. 1878. <i>St Chad.</i>	6 45	61
3	S	Dr. Forbes Winslow died, 1874.	6 43	62
4	S	Fourth Sunday in Lent. H. Larochejacquelein	6 41	63
5	M	Sir A. H. Layard born, 1817. [d. 1794.	6 39	64
6	Tu	Sir James Emerson Tennent d. '69; b. 7 April, 1804.	6 36	65
7	W	<i>St. Perpetua.</i> British & For. Bible Soc. est., 1804.	6 34	66
8	Th	Bernadotte, King of Sweden, d. '44. Sir R. Temple	6 32	67
9	F	Mrs. Barbauld, educationist, d. 1825. [b. 1828.	6 30	68
10	S	Prince of Wales marr. 1863. Emp. Russia b. 1845.	6 27	69
11	S	Fifth Sun. in Lent. Passion Week. Benjamin	6 25	70
12	M	<i>St. Gregory.</i> [West died, 1820.	6 23	71
13	Tu	Sir Thomas N. Talfourd died, 1854.	6 21	72
14	W	Admiral John Byng shot, 1757.	6 18	73
15	Th	Viscount Melbourne b. 1779; d. 24 Nov. 1848.	6 16	74
16	F	Duchess of Kent, Queen's mother, died, 1861.	6 14	75
17	S	Oxf. Lt. Tm. ends. S. PATRICK'S D. Oxf. Boat Race?	6 12	76
18	S	Palm Sun. Holy Week. Press. Louise b. 1848.	6 9	77
19	M	<i>St. Joseph.</i> Deprived Bishop Ken died, 1711.	6 7	78
20	Tu	<i>St. Cuthbert.</i> Sir Isaac Newton died, 1727.	6 5	79
21	W	HILARY LAW SITTINGS END. <i>St. Benedict.</i>	6 2	80
22	Th	Cambridge Lent Term ends. Maundy Thursday.	6 0	81
23	F	Good Friday.	5 58	82
24	S	Queen Elizabeth's Day.	5 56	83
25	S	Easter Sunday. Annunciation. Lady Day.	5 53	84
26	M	Easter Monday. Bk. Holiday. D. of Cambridge	5 51	85
27	Tu	Easter Tuesday. John Bright d. 1889. [b. 1819.	5 49	86
28	W	Oxford Easter Tm. begins. D. of Albany d. 1884.	5 46	87
29	Th	Rev. John Keble died, 1866.	5 44	88
30	F	Francis Douce, antiquary, died, 1834.	5 42	89
31	S	Earl Granville d. 1891. Andrew Lang born, 1844.	5 40	90

PHASES OF THE MOON.

● New Moon 7d. 2h. 18m. Afternoon.
 ☾ First Quarter 14 6 28 Afternoon.
 ○ Full Moon 21 2 11 Afternoon.
 ☾ Last Quarter 29 8 28 Morning.
 Apogee 1d. 4h. A. 251,600 Perigee 17d. 6h. M. 229,000
 In Apogee, 29d. 0h. A. 251,200.

RAINFALL IN MARCH, 1893.

In this month rain fell on 7 days. The total fall for the month was 0.42 inch; below the average of ten years, 1871-80, by 0.82 inch.

MONTHLY NOTES.

- March 1. Auditors of Boroughs to be elected.
 6. Last day for sending in claims and objections relating to Local Board elections.
 25. Quarter Day. — Various parochial and borough accounts are made up to this date.
 26. Bank Holiday.
 27. Last day for sending in nominations for Guardians to Returning Officer.
 31. End of the local financial year in counties.

THE SUN.

MEMORANDA.

Day.	Aster Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Sth.) at Noon.	Hourly Variation of Declination.	Sidereal Time at Noon.
	M. S.	S.	H. M. S.	S.	° ' "		H. M. S.
1	12 28	0°50	22 49 34	9°36	7 28 37	57°1	22 37 6
2	12 16	0°52	22 53 19	9°34	7 5 45	57°3	22 41 3
3	12 3	0°54	22 57 3	9°32	6 42 46	57°6	22 44 59
4	11 50	0°56	23 0 46	9°30	6 19 41	57°8	22 48 56
5	11 37	0°57	23 4 29	9°28	5 56 31	58°0	22 52 52
6	11 23	0°59	23 8 12	9°26	5 33 16	58°2	22 56 49
7	11 8	0°61	23 11 54	9°25	5 9 56	58°4	23 0 46
8	10 53	0°62	23 15 36	9°23	4 46 33	58°5	23 4 42
9	10 38	0°64	23 19 17	9°21	4 23 6	58°7	23 8 39
10	10 23	0°65	23 22 58	9°20	3 59 35	58°8	23 12 35
11	10 7	0°67	23 26 39	9°19	3 36 2	58°9	23 16 32
12	9 51	0°68	23 30 19	9°17	3 12 26	59°0	23 20 28
13	9 34	0°69	23 33 59	9°16	2 48 48	59°1	23 24 25
14	9 18	0°70	23 37 39	9°15	2 25 8	59°2	23 28 21
15	9 1	0°71	23 41 18	9°14	2 1 28	59°2	23 32 18
16	8 43	0°72	23 44 58	9°13	1 37 46	59°2	23 36 15
17	8 26	0°73	23 48 37	9°12	1 14 3	59°2	23 40 11
18	8 8	0°74	23 52 16	9°11	0 50 21	59°3	23 44 8
19	7 50	0°75	23 55 54	9°11	0 26 39	59°2	23 48 4
20	7 32	0°75	23 59 33	9°10	0 2 57	59°2	23 52 1
21	7 14	0°76	0 3 11	9°09	North.	59°2	23 55 57
22	6 56	0°76	0 6 49	9°09	0 44 24	59°1	23 59 54
23	6 37	0°77	0 10 28	9°09	1 8 3	59°0	0 3 50
24	6 19	0°77	0 14 6	9°09	1 31 39	59°0	0 7 47
25	6 0	0°77	0 17 44	9°08	1 55 14	58°9	0 11 44
26	5 42	0°77	0 21 22	9°08	2 18 46	58°8	0 15 40
27	5 23	0°77	0 25 0	9°09	2 42 15	58°6	0 19 37
28	5 5	0°77	0 28 38	9°09	3 5 42	58°5	0 23 33
29	4 47	0°76	0 32 16	9°09	3 29 4	58°4	0 27 30
30	4 28	0°76	0 35 55	9°09	3 52 23	58°2	0 31 26
31	4 10	0°76	0 39 33	9°10	4 15 38	58°0	0 35 23

METEOROLOGICAL OBSERVATIONS, MARCH, 1893.

Day.	TEMPERATURE.			BAROM.	RAIN.	SUN.	WIND.
	Maximum.	Minimum.	Ave. 50 Yrs.	Mean.	FALL.	SHINE.	(Pressure lbs. to foot.)
1	57°2	35°5	40	29°464	0°17	1°5	SSW lbs. 5°3
2	56°6	45°3	40	29°841	0°00	1°0	WSW 6°4
3	47°4	41°5	40	30°125	0°04	...	SE 1°2
4	56°2	41°8	40	29°996	0°10	1°5	SW 1°1
5	54°2	39°6	40	30°054	0°00	...	WNW 1°4
6	51°3	41°0	40	30°112	0°00	...	NW 0°6
7	54°0	38°1	40	30°153	0°00	0°2	WSW 1°8
8	61°0	39°1	40	30°156	0°00	3°8	WSW 0°3
9	60°1	37°8	41	29°921	0°00	1°4	SW 1°4
10	52°0	33°1	41	30°149	0°00	4°8	NW 3°5
11	56°5	32°4	41	30°113	0°00	4°4	SSW 1°6
12	62°3	38°4	41	29°731	0°00	9°3	SSW 2°4
13	56°0	39°0	41	29°567	0°01	1°6	SSW 1°1
14	54°2	44°1	41	29°629	0°01	0°7	SW 1°2
15	56°9	45°2	41	29°637	0°00	1°4	SW 3°8
16	56°5	37°3	41	29°528	0°07	2°7	WSW 5°3
17	46°0	34°3	41	29°758	0°02	4°3	W 5°2
18	45°6	29°7	41	30°075	0°00	7°5	NW 3°2
19	45°0	24°2	41	30°273	0°00	4°0	W 0°1
20	55°0	26°7	41	30°249	0°00	9°5	SW 0°0
21	59°3	28°8	41	30°209	0°00	9°1	SE 0°5
22	55°4	34°0	41	30°131	0°00	5°2	E 0°6
23	64°3	35°7	41	30°121	0°00	7°6	E 0°4
24	62°5	34°2	42	30°221	0°00	10°1	NE 1°1
25	62°8	32°2	42	30°253	0°00	9°9	ENE 0°4
26	57°8	29°1	43	30°066	0°00	7°0	ENE 0°4
27	57°9	32°1	43	29°933	0°00	9°4	ENE 2°2
28	57°0	34°2	43	29°990	0°00	10°7	E 2°3
29	64°0	33°0	44	29°905	0°00	10°0	E 1°2
30	68°0	33°2	44	29°774	0°00	5°6	SW 0°7
31	69°3	38°6	44	29°701	0°00	10°9	SW 1°4

THE MOON.

Day of M.	Rises Morning	Sets Morning	Souths Morning	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 8h. p.m.
	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	D. H.	
1	4 14	10 35	7 25	18 11	28 35	54 9	14 47	23 14	44102
2	5 2	11 33	8 16	19 4	27 50	54 12	14 48	24 14	43012
3	5 38	aft.	9 7	19 57	31 25	54 24	14 51	25 14	32402
4	6 5	1 56	9 56	20 48	29 33	54 43	14 56	26 14	31204
5	6 21	3 12	10 42	21 37	22 18	55 9	15 3	27 14	01324
6	6 37	4 29	11 27	22 24	15 13	55 38	15 11	28 14	12034
7	6 49	5 47	aft.	23 55	6 7	56 9	15 20	29 14	20134
8	7 0	7 4	0 54	23 56	54 1	56 41	15 28	0 22	10324
9	7 10	8 22	1 37	0 43	14 49	57 12	15 37	1 22	30124
10	7 22	9 43	2 31	1 31	12 10	58 38	15 44	2 22	32104
11	7 36	11 9	3 12	2 21	51 16	58 6	15 52	3 22	43204
12	7 55	mrn.	4 5	3 16	6 21	58 29	15 58	4 22	04132
13	8 19	0 36	5 2	4 14	26 25	58 50	16 3	5 22	44103
14	8 58	1 6	3	5 16	27 28	59 7	16 8	6 22	42013
15	9 53	3 14	7 6	6 20	43 36	59 20	16 12	7 22	41023
16	11 9	4 12	8 9	7 24	56 27	59 28	16 14	8 22	43012
17	aft.	4 52	9 8	8 26	56 24	59 29	16 14	9 22	43210
18	2 6	5 19	10 3	9 25	22 19	59 23	16 13	10 22	44320
19	3 36	5 38	10 54	10 19	59 13	58 48	16 9	11 22	40320
20	5 1	5 52	11 42	11 11	22 7	58 45	16 2	12 22	41023
21	6 23	6 5	mrn.	12 0	29 1	0 9	58 13	15 53	12043
22	7 44	6 15	0 27	12 48	25 5	58 35	15 43	14 22	10342
23	9 3	6 28	1 13	13 36	13 11	56 53	15 32	15 22	30124
24	10 23	6 40	1 58	14 24	45 17	55 12	15 20	16 22	32104
25	11 43	6 56	2 45	15 14	40 21	55 33	15 10	17 22	3014
26	mrn.	7 17	3 34	16 6	13 25	55 0	15 1	18 22	3024
27	0 56	7 47	4 24	16 59	15 27	54 35	14 54	19 22	10234
28	2 3	8 27	5 16	17 53	11 28	54 19	14 50	20 22	20143
29	2 58	9 18	6 7	18 47	5 28	54 14	14 48	21 22	10432
30	3 37	10 24	6 58	19 40	1 26	54 19	14 49	22 22	43012
31	4 9	11 36	7 48	20 31	20 23	54 34	14 54	23 22	43120

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.			♀ VENUS.			♂ MARS.			♂ JUPITER.			♂ SATURN.		
D.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
2	23	51	11	21	22	22	18	51	15	3	30	25	13	34	46
7	23	49	52	21	20	9	19	6	29	3	33	20	13	33	52
12	23	37	34	21	21	56	19	21	41	3	36	28	13	32	50
17	23	21	30	21	27	20	19	36	49	3	39	48	13	31	42
22	23	9	48	21	35	50	19	51	51	3	43	21	13	30	29
27	23	6	34	21	46	54	20	6	49	3	47	4	13	29	11

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
D.	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	'
2	1	48	23n	6	59	33s	23	26	7s	18	17	54n	6	59	28s	
7	2	36	37	7	55	1	23	9	45	18	29	13	6	53	7	
12	1	30	7n	8	39	0	22	48	8	18	41	4	6	46	9	
17	0	52	18	9	8	38	22	21	25	18	53	22	6	38	38	
22	3	20	31	9	22	32	21	49	44	19	5	59	6	30	41	
27	5	3	58s	9	20	15s	21	13	15s	19	18	51n	6	22	24s	

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
D.	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	'
5	8	9	11	9	27	9	5	2	1	7	1	0	16	9	4	5
15	8	9	14	5	23	8	5	5	1	6	1	0	16	7	5	5
25	8	9	13	6	20	3	5	7	1	6	1	0	16	4	5	2

SEMI-DIAMETER OF SUN AND PLANETS.

	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀	♂	♀
D.	°	'	"	°	'	"	°	'	"	°	'	"	°	'	"	'
5	16	9	4	5	26	2	3	3	17	5	8	4	16	7	5	5
15	16	7	5	5	22	4	3	4	17	0	8	5	16	4	5	2
25	16	4	5	2	19	0	3	6	16	5	8	5	16	4	5	2

Mean Longitude of Moon's ascending Node, March 1, 12° 2' T.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

March 1. Day breaks at 4h. 55m. morn., and Twilight ends at 7h. 31m. aft., the length of the Day being 10h. 51m.

Mar. 1. Occultation of B. A. C. 6107; magnitude 4. The disappearance takes place at 5h. 13m. morn., 157' from the vertex; the reappearance at 6h. 16m. morn., 246' from the vertex.

Mar. 5. Mean time of Sun's semidiameter passing the meridian, 1m. 50s.

Mar. 7. Venus stationary, 5h. aft.

Mar. 12. Jupiter in conjunction with the Moon, 9h. aft. 2 4° 39' S.

Mar. 14. Mercury in inferior conjunction with the Sun, 8h. morn.

Mar. 15. A near approach of 136 Tauri to the Moon; magnitude 5. The least distance of star from Moon's limb occurs at oh. 25m. morn., 143' from the vertex.

Mar. 20. Mean time of Sun's semidiameter passing the meridian, 1m. 43s.

Mar. 20. Sun enters Aries: Spring commences, 3h. aft.

Mar. 21. Partial Eclipse of Moon, invisible at Greenwich; see p. 70.

Mar. 21. A near approach of β Virginis to the Moon; magnitude 3½. The least distance of star from Moon's limb occurs at 5h. 24m. morn., 351' from the vertex.

Mar. 23. Occultation of Spica Virginis; magnitude 1. The disappearance takes place at 4h. 5m. morn., 97' from the vertex; the reappearance at 5h. 13m. morn., 264' from the vertex.

Mar. 26. Occultation of 2 Scorpii; magnitude 5. The disappearance takes place at 2h. 32m. morn., 134' from the vertex; the reappearance at 3h. 52m. morn., 279' from the vertex.

In this month the Mornings increase 1h. 7m., and the Afternoons 51m.

MORNING AND EVENING STARS.

♂ MERCURY is an evening star till about the middle of the month, after which it becomes a morning star.

♀ VENUS is a morning star throughout the month: is at its greatest brilliancy on the 23rd at 2h. morn.

♂ MARS is a morning star, badly situated for observation.

Day of

Time of High Water at the undermentioned Places—

Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Earl.)	
		Morn.		Morn.		Morn.		Morn.		Morn.		Morn.		Morn.	
		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	Th	8 6	8 44	5 44	6 33	0 58	1 40	0 37	1 15	6 30	7 13	9 21	10 7	5 36	6 18
2	F	9 31	10 22	7 25	8 30	2 28	3 21	1 57	2 42	8 2	8 48	10 53	11 37	7 3	7 47
3	S	11 9	11 51	8 51	9 25	4 8	4 52	3 25	4 5	9 30	10 7	...	0 16	8 26	9 2
4	S	...	0 27	9 52	10 13	5 27	5 56	4 41	5 8	10 36	10 58	0 49	1 14	9 31	9 55
5	M	0 55	1 17	10 31	10 47	6 18	6 38	5 29	5 47	11 19	11 38	1 34	1 52	10 15	10 32
6	Tu	1 36	1 55	11 3	11 20	6 57	7 14	6 4	6 20	11 55	...	2 10	2 26	10 47	11 1
7	W	2 11	2 27	11 35	11 51	7 30	7 46	6 37	6 53	0 13	0 30	2 41	2 56	11 16	11 31
8	Th	2 41	2 56	...	0 6	8 2	8 16	7 9	7 24	0 47	1 2	3 11	3 25	11 45	11 59
9	F	3 10	3 24	0 22	0 39	8 31	8 47	7 39	7 56	1 18	1 35	3 39	3 55	...	0 16
10	S	3 40	3 57	0 55	1 12	9 2	9 18	8 12	8 28	1 52	2 8	4 11	4 28	0 34	0 51
11	S	4 14	4 30	1 28	1 44	9 34	9 49	8 45	9 1	2 23	2 40	4 45	5 2	1 8	1 25
12	M	4 46	5 3	2 0	2 18	10 5	10 22	9 18	9 37	2 57	3 15	5 20	5 38	1 43	2 2
13	Tu	5 20	5 40	2 38	2 57	10 41	11 0	9 57	10 12	3 34	3 53	6 0	6 23	2 23	2 45
14	W	6 2	6 25	3 21	3 45	11 21	11 43	10 42	11 12	4 17	4 41	6 49	7 16	3 10	3 38
15	Th	6 51	7 21	4 15	4 56	...	0 11	11 47	...	5 9	5 46	7 50	8 33	4 10	4 52
16	F	8 1	8 46	5 44	6 42	0 52	1 40	0 31	1 16	6 30	7 21	9 21	10 15	5 37	6 25
17	S	9 40	10 33	7 35	8 22	2 37	3 31	2 4	2 50	8 12	9 1	11 3	11 47	7 12	7 57
18	S	11 21	...	9 1	9 32	4 22	5 2	3 36	4 16	9 42	10 16	...	0 25	8 37	9 11
19	M	0 4	0 35	9 58	10 20	5 36	6 4	4 48	5 14	10 44	11 9	0 54	1 19	9 41	10 5
20	Tu	1 3	1 26	10 40	11 0	6 28	6 51	5 36	5 57	11 32	11 54	1 42	2 3	10 25	10 43
21	W	1 48	2 8	11 20	11 39	7 11	7 31	6 18	6 38	...	0 15	2 22	2 41	11 1	11 18
22	Th	2 26	2 44	11 58	...	7 49	8 7	6 57	7 15	0 34	0 53	2 59	3 16	11 36	11 54
23	F	3 1	3 19	0 17	0 34	8 25	8 42	7 34	7 51	1 12	1 30	3 33	3 50	...	0 12
24	S	3 36	3 53	0 51	1 8	8 58	9 15	8 8	8 25	1 48	2 5	4 7	4 25	0 30	0 48
25	S	4 10	4 27	1 24	1 40	9 30	9 45	8 41	8 57	2 20	2 36	4 41	4 59	1 4	1 22
26	M	4 42	4 58	1 55	2 11	10 0	10 15	9 13	9 30	2 52	3 8	5 15	5 31	1 40	1 56
27	Tu	5 13	5 29	2 27	2 44	10 31	10 47	9 46	10 4	3 23	3 40	5 50	6 10	2 13	2 32
28	W	5 49	6 9	3 4	3 24	11 4	11 22	10 25	10 50	4 0	4 20	6 32	6 55	2 53	3 15
29	Th	6 30	6 56	3 50	4 22	11 46	...	11 20	11 56	4 45	5 13	7 23	7 58	3 43	4 17
30	F	7 27	8 4	5 1	5 48	0 18	0 57	...	0 35	5 49	6 33	8 38	9 25	4 56	5 39
31	S	8 50	9 39	6 41	7 30	1 44	2 36	1 18	2 2	7 19	8 7	10 13	10 58	6 23	7 8

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.
5	6 42M	0 59A	7 16A	5 2M	10 28M	3 54A	4 14M	8 8M	0 2A	8 56M	4 39A	0 25M	9 11A	2 43M	8 11M
12	6 5M	0 17A	6 29A	4 42M	10 2M	3 22A	4 4M	8 1M	11 58M	8 30M	4 15A	0 4M	8 41A	2 14M	7 43M
19	5 34M	11 28M	5 22A	4 26M	9 42M	2 58A	3 53M	7 55M	11 57M	8 6M	3 53A	11 40A	8 11A	1 45M	7 15M
26	5 12M	10 51M	4 30A	4 13M	9 29M	2 45A	3 41M	7 48M	11 55M	7 41M	3 30A	11 19A	7 40A	1 16M	6 47M

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.		DECL. N.
	H. M.	S.	
1	1 18	56.8	88 44 51
10	1 18	51.2	88 44 49
19	1 18	47.6	88 44 47
28	1 18	45.6	88 44 44

ANGULAR DISTANCE OF THE MOON FROM ALDEBARAN.

D.	Position of Star.		6 P.M.		9 P.M.		Midnight.
	West	East	°	'	°	'	
17	West	59	17	6	61	2	62
18	West	59	19	15	75	4	76
19	West	87	19	0	89	3	90
20	West	101	9	58	102	52	104

At midnight, in the beginning of March, the constellations Ursa Major, Leo, Crater, and Hydra are on the meridian. In Ursa Major is a large planetary Nebula, appearing as a mass of attenuated light, from $3\frac{1}{2}$ to 4' in diameter; it is situated in R.A. 11h. 8m. 29s., and Decl. 55° 37' N. Its spectroscopic examination leads to the inference that it is a mass of incandescent gas. Virgo comes to the meridian about midnight

towards the end of this month. Between Virgo and Coma Berenices is a large Nebula, one of the class known as "Spiral Nebulae," situated in R.A. 12h. 13m. 21s., and Decl. 15° 0' N. With a large telescope of 8 inches aperture it appears to be resolvable in the centre.

Uranus can be well observed in this month. On the 23rd it passes the meridian at 2h. 48m. morn., in R.A. 14h. 50m. 9s. and Decl. 15° 55' S.

DAY OF			Fasts and Festivals. Remarkable Days—Events.	THE SUN		DAYS	
M.	Light and Dark.	W.		Rises.	Sets.	of the Year.	to end of Year.
1		S	First S. aft. Easter. Low S. Union Eng. & Scot. 1707.	5 37	6 30	91	274
2		M	Richard Cobden d. 1865. Holman Hunt b. 1827.	5 35	6 32	92	273
3		Tu	EASTER LAW SITTINGS BEGIN. <i>St. Richard.</i> ['65).	5 33	6 34	93	272
4		W	<i>St. Ambrose.</i> Lond. Drainage (1st portion compld.)	5 30	6 35	94	271
5		Th	Prince Alexander of Battenberg born, 1857.	5 28	6 37	95	270
6		F	Old Lady Day. Alaric A. Watts died, 1864.	5 26	6 39	96	269
7		S	W. von Kaulbach, artist, died, 1874.	5 24	6 41	97	268
8		S	Second S. af. Easter. King of Denmark b. 1818.	5 22	6 42	98	267
9		M	King of the Belgians born, 1835.	5 19	6 44	99	266
10		Tu	"General" Booth born, 1829.	5 17	6 45	100	265
11		W	Charles Reade, novelist, died, 1884.	5 15	6 47	101	264
12		Th	Lord Rodney's victory, 1782.	5 13	6 49	102	263
13		F	Cambridge Easter Term begins.	5 10	6 50	103	262
14		S	Pss. (Beatrice) Battenberg b. '57; marr. 23 July '85.	5 8	6 52	104	261
15		S	Third S. after Easter. Card. Vaughan b. '32.	5 6	6 54	105	260
16		M	Sir Albert William Woods, Garter, born, 1816.	5 4	6 55	106	259
17		Tu	Benjamin Franklin died, 1790.	5 2	6 57	107	258
18		W	Justus Liebig, chemist, died, 1873.	5 0	6 59	108	257
19		Th	<i>Alphege.</i> Primrose Day. Ld. Beaconsfield d. 1881.	4 58	7 0	109	256
20		F	King Charles of Roumania born, 1839.	4 55	7 2	110	255
21		S	Baroness B.-Coutts b. 1814. Kossuth b. 1802.	4 53	7 4	111	254
22		S	Fourth Sunday after Easter.	4 51	7 5	112	253
23		M	St. GEORGE'S DAY. William Shakspeare d. 1616.	4 49	7 7	113	252
24		Tu	Sir George Nares b. 1831. Daniel Defoe d. 1731.	4 47	7 9	114	251
25		W	St. Mark, Evangelist and Martyr. W. Cowper	4 45	7 10	115	250
26		Th	Lord De Tabley born, 1835. [d. 1800.	4 43	7 12	116	249
27		F	Samuel Morse, electrician, b. 1791; d. Ap. 2, 1872.	4 41	7 14	117	248
28		S	Admiral Sir Edward Codrington died, 1851.	4 39	7 15	118	247
29		S	Fifth Sunday after Easter. Rogation Sunday.	4 37	7 17	119	246
30		M	Duke of Argyll b. 1823. Rogation Day.	4 36	7 19	120	245

PHASES OF THE MOON.

● New Moon 6d. 4h. om. Morning.
 ☾ First Quarter 13 0 33 Morning.
 ○ Full Moon 20 3 2 Morning.
 ☾ Last Quarter 28 3 20 Morning.
 Perigee 11d. 3h. m. 229,300 | Apogee 26d. 8h. m. 251,300

RAINFALL IN APRIL, 1893.

In this month rain fell on 3 days. The total fall for the month was 0.12 inch; below the average of ten years, 1871-80, by 2 inches.

MONTHLY NOTES.

- April 1. Refreshment House Licences to be renewed.
 2. Quarter Sessions begin unless otherwise fixed.
 5. Dividends on Consols, &c., due.
 9. Voting papers for election of Guardians to be delivered. (And collected on the 10th.)
 —. Fire Insurances must be paid.
 16. Newly-elected Local Board members and Guardians come into office.
 —. Edinburgh Spring Holiday.

THE SUN.

MEMORANDA.

Day.	After Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Nth.) at Noon.	Hourly Variation (°) of Declination.	Sidereal Time at Noon.
	M. S.	S.	H. M. S.	S.			H. M. S.
1	3 52	0.75	0 43 11	9.10	4 38 48	57.8	0 39 19
2	3 34	0.75	0 46 50	9.11	5 1 54	57.6	0 43 16
3	3 16	0.74	0 50 29	9.11	5 24 54	57.4	0 47 13
4	2 58	0.73	0 54 8	9.12	5 47 48	57.1	0 51 9
5	2 41	0.72	0 57 47	9.13	6 10 37	56.9	0 55 6
6	2 24	0.72	1 1 26	9.14	6 33 19	56.6	0 59 2
7	2 7	0.71	1 5 5	9.15	6 55 54	56.3	1 2 59
8	1 50	0.70	1 8 45	9.16	7 18 22	56.0	1 6 55
9	1 33	0.69	1 12 25	9.17	7 40 43	55.7	1 10 52
10	1 17	0.68	1 16 5	9.18	8 2 56	55.4	1 14 48
11	1 0	0.67	1 19 45	9.19	8 25 1	55.0	1 18 45
12	0 45	0.65	1 23 26	9.20	8 46 57	54.6	1 22 41
13	0 29	0.64	1 27 7	9.21	9 8 44	54.3	1 26 38
14	0 14	0.63	1 30 48	9.22	9 30 22	53.9	1 30 35
15	Bef.	0.62	1 34 30	9.24	9 51 50	53.5	1 34 31
16	0 16	0.60	1 38 12	9.25	10 13 9	53.0	1 38 28
17	0 30	0.59	1 41 54	9.27	10 34 17	52.6	1 42 24
18	0 44	0.57	1 45 37	9.28	10 55 15	52.2	1 46 21
19	0 57	0.55	1 49 20	9.30	11 16 2	51.7	1 50 17
20	1 10	0.53	1 53 3	9.32	11 36 38	51.2	1 54 14
21	1 23	0.52	1 56 47	9.34	11 57 2	50.8	1 58 10
22	1 35	0.50	2 0 32	9.36	12 17 15	50.3	2 2 7
23	1 47	0.48	2 4 17	9.38	12 37 16	49.8	2 6 4
24	1 58	0.46	2 8 2	9.40	12 57 4	49.2	2 10 0
25	2 9	0.44	2 11 48	9.42	13 16 40	48.7	2 13 57
26	2 19	0.42	2 15 34	9.44	13 36 3	48.2	2 17 53
27	2 29	0.39	2 19 21	9.46	13 55 13	47.6	2 21 50
28	2 38	0.37	2 23 8	9.48	14 14 9	47.0	2 25 46
29	2 47	0.35	2 26 56	9.50	14 32 51	46.4	2 29 43
30	2 55	0.33	2 30 44	9.53	14 51 18	45.8	2 33 39

METEOROLOGICAL OBSERVATIONS, APRIL, 1893.

Day.	TEMPERATURE.			BAROM.	RAIN.	SUN.	WIND.	
	Maximum.	Minimum.	Ave. 50 Yrs.					
				Mean.	SHINE.	SHINE.	(Pressure lbs. to foot.)	
				inches.	inches.	hours.	Directn. SSE	Prssure. lbs. 0.6
1	70.8	37.1	45	29.798	0.00	10.0		
2	62.7	41.5	45	30.032	0.00	9.2	NE	1.5
3	63.0	36.4	45	30.063	0.00	10.9	E	0.7
4	59.9	35.1	45	30.079	0.00	11.3	ENE	1.2
5	53.0	42.1	45	30.020	0.00	3.9	E	1.4
6	55.8	41.4	45	30.059	0.00	4.6	E	1.2
7	66.6	36.7	45	30.215	0.00	9.6	ENE	0.7
8	59.5	39.2	45	30.304	0.00	5.1	NE	1.2
9	56.3	38.5	45	30.213	0.00	8.7	ENE	1.1
10	66.6	35.5	45	30.026	0.00	11.2	NE	1.9
11	48.1	37.6	45	30.136	0.00	0.3	ENE	4.3
12	49.2	33.7	45	30.185	0.00	3.1	NE	2.0
13	52.4	30.2	45	30.178	0.00	3.0	NNE	2.0
14	58.6	36.2	45	30.168	0.00	6.5	SE	0.3
15	66.3	34.2	46	30.024	0.00	11.8	SW	1.3
16	63.2	37.4	46	29.983	0.00	3.9	WSW	0.5
17	51.5	42.3	46	30.099	0.04	...	E	2.4
18	70.6	40.3	46	29.909	0.00	4.9	ESE	0.3
19	72.4	44.2	47	29.761	0.00	10.4	E	1.4
20	80.0	43.0	47	29.863	0.06	5.4	ESE	1.2
21	77.1	44.3	47	29.984	0.00	11.8	E	1.6
22	66.5	44.3	47	29.957	0.00	11.9	E	2.3
23	75.0	42.0	48	29.868	0.00	11.7	ENE	0.4
24	77.3	42.2	48	29.859	0.00	11.5	E	2.1
25	76.6	42.5	48	29.857	0.00	11.5	ENE	1.4
26	71.3	41.2	48	29.856	0.00	12.6	ENE	0.6
27	62.6	42.2	48	29.818	0.00	7.8	ENE	1.1
28	66.0	41.4	48	29.787	0.00	7.4	ENE	0.0
29	65.7	45.1	49	29.748	0.02	3.4	WNW	3.6
30	60.0	41.0	50	29.853	0.00	7.6	W	3.9

THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Morning.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 8h. p.m.
1	4 28	0 52	8 35	21 20 45	20 52 58	54 58	15 24	22	432 01
2	4 44	2 9	9 20	22 8 26	15 13 35	55 30	15 9 25	22	431 02
3	4 56	3 26	10 4	22 54 54	9 42 40	56 7	15 19 26	22	440 23
4	5 8	4 44	10 48	23 40 57	3 40 18	56 47	15 30 27	22	420 13
5	5 19	5 22	11 32	0 27 30	2 40 37	57 27	15 41 28	22	412 03
6	5 29	7 24	aft.	1 15 38	9 3 0	58 4	15 51 0	8	430 12
7	5 43	8 50	1 6	2 17 25	7 41	58 35	15 59 1	8	432 04
8	5 59	10 19	1 58	3 0 53	20 31 49	58 59	16 6 2	8	32 014
9	6 22	11 47	2 55	3 59 25	24 50 19	59 14	16 10 3	8	31 024
10	6 56	mrn.	3 57	5 1 41	27 38 51	59 22	16 12 4	8	01234
11	7 48	1 8	5 6	6 12 28	39 11	59 23	16 13 5	8	2034
12	8 59	2 11	6 3	7 10 37	27 44 45	59 18	16 11 6	8	21 034
13	10 23	2 55	7 6	8 12 40	25 49	59 8	16 9 7	8	03124
14	11 52	3 25	7 58	9 10 59	20 51 19	58 54	16 5 8	8	431 04
15	aft.	3 47	8 48	10 5 20	15 33 9	58 36	16 0 9	8	324 01
16	2 41	4 1	9 36	10 56 16	9 31 34	58 15	15 54 10	8	431 02
17	4 4	4 14	10 21	11 44 50	3 7 59	57 49	15 47 11	8	40132
18	5 25	4 25	11 6	12 32 8	3 18 25	57 21	15 39 12	8	4203
19	6 43	4 37	11 50	13 19 15	9 30 17	56 49	15 31 13	8	421 03
20	8 3	4 47	mrn.	14 7 9	15 11 39	56 17	15 22 14	8	40312
21	9 21	5 3	0 37	14 56 31	20 7 40	55 44	15 13 15	8	431 02
22	10 37	5 19	1 24	15 47 43	24 4 58	55 14	15 4 16	8	342 01
23	11 48	5 45	2 14	16 40 40	26 52 21	54 48	14 57 17	8	314 0
24	mrn.	6 21	3 6	17 34 45	28 21 57	54 27	14 52 18	8	03142
25	0 48	7 8	3 58	18 29 128	30 28	54 15	14 49 19	8	21 034
26	1 34	8 11	4 50	19 22 24	27 19 30	54 12	14 48 20	8	42034
27	2 8	9 19	5 40	20 14 54	24 48	54 19	14 49 21	8	01324
28	2 32	10 35	6 28	21 3 42	21 24 45	54 36	14 54 22	8	31 024
29	2 48	11 51	7 13	21 51 22	16 58 54	55 3	15 2 23	8	32 014
30	3 3	aft.	7 57	22 37 36	11 47 6	55 39	15 11 24	8	31 04

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
1	23 11 53	22 0 1	20 21 39	3 50 58	13 27 49
6	23 24 2	22 14 46	20 36 22	3 55 1	13 26 24
11	23 41 18	22 30 45	20 50 57	3 59 12	13 24 58
16	0 2 25	22 47 43	21 5 22	4 3 31	13 23 32
21	0 26 37	23 5 26	21 19 39	4 7 57	13 22 7
26	0 53 34	23 23 45	21 33 46	4 12 30	13 20 44

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂	♀	♂	♂	♂	♂
D.	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
1	5 45 44 s	9 2 6 s	20 32 9 s	19 31 52 n	6 13 52 s	
6	5 28 47	8 28 51	19 46 43	19 44 58	6 5 13	
11	4 21 26	7 41 36	18 57 11	19 58 2	5 56 34	
16	2 31 39	6 41 29	18 3 52	20 11 2	5 48 2	
21	0 31 58 s	5 29 42	17 7 1	20 23 51	5 39 44	
26	2 50 8 n	4 7 29 s	16 6 55 s	20 36 27 n	5 31 45 s	

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

	☉	♂	♀	♂	♂	♂
D.	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
3	8 8	11 3	17 2	6 0	1 6	1 0
15	8 8	9 5	14 9	6 4	1 5	1 0
25	8 8	8 2	13 2	6 7	1 5	1 0

SEMI- DIAMETER OF SUN AND PLANETS.

	☉	♂	♀	♂	♂	♂
D.	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
3	16 1	4 3	16 1	3 8	16 1	8 6
15	15 58	3 6	14 0	4 0	15 8	8 6
25	15 55	3 1	12 4	4 2	15 6	8 5

Mean Longitude of Moon's ascending Node, April 1, 10° 23' T.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.
April 1. Day breaks at 3h. 37m. *morn.*, and Twilight ends at 8h. 31m. *aft.*, the length of the Day being 12h. 53m.

Apr. 5. Mean time of Sun's semidiameter passing the meridian, 1m. 4' 4s.

Apr. 6. Annular eclipse of the Sun, invisible at Greenwich. See page 70.

Apr. 9. Mercury at greatest distance from the Sun, 5h. *morn.*

Apr. 9. Occultation, disappearance of χ^1 Tauri; magnitude 5½. The disappearance takes place at 7h. 4m. *aft.*, 24° from the vertex.

Apr. 10. Mercury at greatest elongation (28°) West, 11h. *aft.*

April 11. Saturn in opposition to the Sun, 6h. *aft.*

Apr. 11. Occultation, disappearance, of 49 Aurigæ; magnitude 5½. The disappearance takes place at 8h. 40m. *aft.*, 32° from the vertex.

Apr. 16. Occultation of σ Leonis; magnitude 4. The disappearance takes place at 8h. 42m. *aft.*, 90° from the vertex; the reappearance at 9h. 29m. *aft.*, 358° from the vertex.

Apr. 20. Mean time of Sun's semidiameter passing the meridian, 1m. 5' 1s.

Apr. 27. Venus at greatest elongation (46°) West, 8h. *morn.*

Apr. 29. Occultation of κ Capricorn; magnitude 5. The disappearance takes place at 3h. 2m. *morn.*, 87° from the vertex; the reappearance at 4h. 13m. *morn.*, 290° from the vertex.

In this month the Mornings increase 1h. 1m., the Afternoons 49m.

MORNING AND EVENING STARS.

♂ MERCURY is a morning star in this month; in Aquarius till the 6th, then enters Pisces.

♀ VENUS is also a morning star, in Aquarius, and may be observed to the South-west of Mercury.

♂ MARS is a morning star, and may be observed rising more than an hour before the Sun in the South-east quarter of the heavens.

♂ JUPITER is an evening star, and may be seen, soon after Sunset, in the North-west. About the 16th it will be found midway between Aldebaran and the Pleiades.

♂ SATURN is well placed for observation in this month; will be found 5° or 6° to the North of Spica Virginis.

Day of		Time of High Water at the undermentioned Places—															
Month.	Week.	LONDON BRIDGE		LIVERPOOL		BRISTOL		HULL		GREENOCK		LEITH		DUBLIN (Barl)			
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
1	S	10 29	11 11	8 12	8 47	3 26	4 11	2 46	3 27	8 51	9 26	11 38	...	11 38	...	7 48	8 22
2	M	11 46	...	9 14	9 35	4 48	5 16	4 1	4 30	9 56	10 19	0 11	0 38	8 51	9 14	8 51	9 14
3	Tu	0 17	0 39	9 55	10 12	5 39	6 0	4 51	5 11	10 40	11 0	0 57	1 16	9 37	9 56	9 37	9 56
4	W	0 59	1 17	10 27	10 43	6 19	6 36	5 28	5 43	11 17	11 35	1 33	1 50	10 12	10 27	10 12	10 27
5	Th	1 34	1 51	10 59	11 16	6 54	7 9	6 0	6 16	11 52	...	2 6	2 21	10 41	10 56	10 41	10 56
6	F	2 6	2 22	11 33	11 50	7 26	7 43	6 33	6 51	0 10	0 28	2 37	2 53	11 12	11 29	11 12	11 29
7	S	2 38	2 54	...	0 9	8 0	8 17	7 8	7 26	0 46	1 4	3 9	3 25	11 46	...	...	...
8	S	3 10	3 28	0 26	0 43	8 34	8 50	7 44	8 0	1 22	1 40	3 43	3 59	0 4	0 22	0 4	0 22
9	M	3 45	4 4	1 2	1 20	9 8	9 26	8 18	8 37	1 58	2 16	4 18	4 37	0 41	1 0	0 41	1 0
10	Tu	4 22	4 42	1 40	2 1	9 45	10 6	8 57	9 19	2 36	2 57	4 59	5 20	1 22	1 44	1 22	1 44
11	W	5 3	5 25	2 23	2 46	10 27	10 49	9 42	10 6	3 19	3 42	5 45	6 11	2 8	2 34	2 8	2 34
12	Th	5 50	6 17	3 12	3 41	11 12	11 39	10 33	11 8	4 18	4 37	6 40	7 13	3 1	3 33	3 1	3 33
13	F	6 48	7 23	4 17	5 1	...	0 13	11 50	...	5 10	5 49	7 53	8 38	4 12	4 56	4 12	4 56
14	S	8 4	8 52	5 52	6 45	0 56	1 48	0 35	1 22	6 37	7 23	9 29	10 17	5 43	6 27	5 43	6 27
15	S	9 44	10 30	7 32	8 10	2 40	3 29	2 6	2 47	8 9	8 49	10 59	11 35	7 9	7 45	7 9	7 45
16	M	11 9	11 43	8 41	9 9	4 10	4 42	3 24	3 56	9 22	9 52	...	0 5	8 17	8 47	8 17	8 47
17	Tu	...	0 12	9 32	9 54	5 12	5 37	4 25	4 48	10 17	10 41	0 32	0 53	9 14	9 38	9 14	9 38
18	W	0 36	1 0	10 13	10 32	6 0	6 21	5 10	5 29	11 2	11 23	1 15	1 35	9 58	10 15	9 58	10 15
19	Th	1 19	1 39	10 52	11 10	6 42	7 2	5 48	6 8	11 45	...	1 54	2 13	10 33	10 50	10 33	10 50
20	F	1 58	2 16	11 29	11 46	7 20	7 38	6 27	6 47	0 5	0 24	2 31	2 49	11 8	11 24	11 8	11 24
21	S	2 34	2 50	...	0 5	7 55	8 13	7 4	7 22	0 41	1 0	3 4	3 21	11 42	...	...	...
22	S	3 7	3 25	0 22	0 39	8 30	8 47	7 40	7 57	1 18	1 36	3 39	3 56	0 0	0 18	0 0	0 18
23	M	3 41	3 57	0 56	1 13	9 3	9 19	8 13	8 30	1 53	2 9	4 13	4 30	0 36	0 53	0 36	0 53
24	Tu	4 15	4 32	1 30	1 46	9 35	9 51	8 47	9 4	2 26	2 42	4 48	5 5	1 11	1 29	1 11	1 29
25	W	4 49	5 6	2 4	2 21	10 7	10 25	9 23	9 40	3 0	3 17	5 24	5 44	1 48	2 7	1 48	2 7
26	Th	5 24	5 45	2 41	3 2	10 42	11 2	10 1	10 24	3 37	3 58	6 7	6 31	2 29	2 52	2 29	2 52
27	F	6 7	6 32	3 26	3 55	11 24	11 51	10 53	11 27	4 22	4 49	6 58	7 30	3 18	3 50	3 18	3 50
28	S	7 1	7 33	4 28	5 8	...	0 24	...	0 3	5 18	5 56	8 5	8 45	4 24	5 3	4 24	5 3
29	S	8 11	8 52	5 52	6 39	1 4	1 48	0 42	1 21	6 36	7 17	9 29	10 11	5 41	6 21	5 41	6 21
30	M	9 37	10 17	7 19	7 50	2 34	3 15	2 0	2 35	7 56	8 29	10 46	11 17	6 56	7 27	6 56	7 27

RISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ♿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
2	4 57M	10 31M	4 5A	4 2M	9 20M	2 38A	3 28M	7 41M	11 54M	7 18M	3 8A	10 58A	7 10A	0 46M	1 18M
9	4 44M	10 23M	4 2A	3 50M	9 13M	2 36A	3 14M	7 34M	11 54M	6 54M	2 46A	10 38A	6 39A	0 17M	5 50M
16	4 34M	10 24M	4 14A	3 39M	9 9M	2 39A	2 59M	7 27M	11 55M	6 31M	2 25A	10 19A	6 9A	11 43A	5 21M
23	4 22M	10 31M	4 40A	3 29M	9 7M	2 45A	2 43M	7 19M	11 55M	6 7M	2 3A	9 59A	5 38A	11 13A	4 53M
30	4 11M	10 43M	5 15A	3 17M	9 5M	2 53A	2 27M	7 11M	11 55M	5 44M	1 42A	9 40A	5 8A	10 44A	4 24M

APPARENT RIGHT ASCENSION AND DECLINATION of the POLE STAR.

D.	R. A.	DECL. N.
1	1 18 44.9	88 44 43
10	1 18 45.0	88 44 40
19	1 18 46.3	88 44 37
28	1 18 49.4	88 44 35

ANGULAR DISTANCE of the MOON FROM SATURN.

D.	Position of Star.	6 P.M.	9 P.M.	Midnight.
11	East	106 32 25	104 45 26	102 58 30
12	East	92 17 55	90 31 22	88 44 54
13	East	78 7 43	76 21 50	74 36 2
14	East	64 3 28	62 18 26	60 33 31

At the latter part of April the constellations Draco, Boötes, and Libra will be on the meridian about midnight. An irresolvable double Nebula in Canes Venatici can be observed in this month: it is situated in R.A. 13h. 25m. 23s., and in Decl. 47° 44' N. The Southern Nebula is surrounded by a faint ring of nebulous light, and was called by Herschel, in his Catalogue, "the Halo Nebula." Later observations placed it among the "Spiral" Nebulae. That this is not a true incandescent Nebula is shewn by the ab-

sence of bright lines in its spectrum. In R.A. 15h. 13m. 7s., Decl. 2° 29' N., is a very fine cluster of stars, condensed into great brilliancy towards the centre. Sir W. Herschel could distinguish over 200 stars in this group in the field of his 40-foot reflector, but found the middle portion so condensed that the individual stars could not be distinguished. Lord Rosse says that the stars range from the 12th to 15th mag. The evenings about the 5th are the best for observing these objects.

1894.]

MAY XXXI DAYS.

[29]

DAY OF			Fasts and Festivals. Remarkable Days—Events.	THE SUN		DAYS	
M.	Light and Dark.	W.		Rises.	Sets.	of the Year.	to end of Year.
1	☐	Tu	SS. Philip and James. Rogation Day.	4 34	7 20	121	244
2	☐	W	Duke of Northumberland b. 1810. Rogation Day.	4 32	7 22	122	243
3	☐	Th	Ascension Day. Invention of Cross. Holy Thursday.	4 30	7 23	123	242
4	☐	F	Dr. Huxley b. 1825. David Livingstone d. 1873.	4 28	7 25	124	241
5	☐	S	Empress Eugénie b. 1826. Napoleon I. d. 1821.	4 26	7 27	125	240
6	☐	S	Sunday after Ascension. Dublin Murders, 1882.	4 25	7 28	126	239
7	☐	M	Lord Rosebery b. 1847. Royal Academy opens.	4 23	7 30	127	238
8	☐	Tu	R. Barclay Allardice, pedestrian, died, 1854.	4 21	7 31	128	237
9	☐	W	Half-Quarter Day. Newmarket; 2000 Guineas.	4 19	7 33	129	236
10	☐	Th	Bishop Ryle, Liverpool, born, 1816. [1000 Gs.	4 18	7 35	130	235
11	☐	F	EASTER SITS. END. Oxf. East. T. ends. Newmkt.;	4 16	7 36	131	234
12	☐	S	Oxford Trinity Term begins. Ld. Grimthorpe b. '16.	4 15	7 38	132	233
13	☐	S	Whit Sunday. Pentecost.	4 13	7 39	133	232
14	☐	M	Whitsun Monday. Bank Holiday.	4 11	7 40	134	231
15	☐	Tu	Whitsun Tuesday. Florence Nightingale b. '20.	4 10	7 42	135	230
16	☐	W	Rt. Hon. Hen. Hartley Fowler b. 1830. Emb. Day.	4 9	7 44	136	229
17	☐	Th	King of Spain born, 1886.	4 7	7 45	137	228
18	☐	F	Rev. J. Henson, Uncle Tom, d. 1883. Emb. Day.	4 6	7 47	138	227
19	☐	S	St. Dunstan. John Clare d. 1864. Ember Day.	4 4	7 48	139	226
20	☐	S	Trinity Sunday. Lord Belper born, 1840.	4 3	7 49	140	225
21	☐	M	Maria Edgeworth died, 1849.	4 2	7 51	141	224
22	☐	Tu	TRINITY LAW SITTINGS BEGIN.	4 1	7 52	142	223
23	☐	W	Albert Smith d. 1860. Mark Lemon d. 1870.	3 59	7 54	143	222
24	☐	Th	CORPUS CHRISTI. Queen Victoria born, 1819.	3 58	7 55	144	221
25	☐	F	Princess Christian b. 1846; marr. 5 July, 1866.	3 57	7 56	145	220
26	☐	S	St. Augustine. Duchess May of York born, 1867.	3 56	7 57	146	219
27	☐	S	First Sunday after Trinity. Venerable Bede.	3 55	7 59	147	218
28	☐	M	John, Earl Russell, died, 1878. [d. 1814.	3 54	8 0	148	217
29	☐	Tu	King Charles II. restd. 1660. Empress Josephine	3 53	8 1	149	216
30	☐	W	Decoration D.; Gen. Holiday, U.S.A. Vis. Cross b'23.	3 52	8 2	150	215
31	☐	Th	Joan of Arc burnt, 1431. Ld. Chelmsford b. 1827.	3 51	8 3	151	214

PHASES OF THE MOON.

☉ New Moon	5d.	2h. 41m.	Afternoon.
☾ First Quarter	12	6 21	Morning.
☾ Full Moon	19	4 43	Afternoon.
☾ Last Quarter	27	8 4	Afternoon.

Perigee 8d. 4h. m. 226,300 | Apogee 24d. 1h. m. 251,900

RAINFALL IN MAY, 1893.

In this month rain fell on 9 days. The total fall for the month was 0.54 inch; below the average of ten years, 1871-80, by 1.24 inch.

MONTHLY NOTES.

May 1. Holiday at Bank Transfer Office and Stock Exchange.

— Bank and general holiday in Scotland.

ENGLISH QUARTER DAYS.—These are—Lady Day, March 25; Midsummer, June 24; Michaelmas, Sept. 29; and Christmas, Dec. 25. Quarterly trade accounts are made up to the end of the months of March, June, Sept., and December.

SCOTTISH QUARTER DAYS OR TERMS are—Candlemas, Feb. 2; Whitsunday, May 15; Lammas, Aug. 1; and Martinmas, Nov. 11. The Removal Terms in Scottish Burghs are, May 28; Nov. 28.

14. Bank Holiday.

THE SUN.

Day.	Before Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Nth.) at Noon.	Hourly Variation of Declination.	Sideral Time at Noon.
	M. S.	S.	H. M. S.	S.	" ' "	" "	H. M. S.
1	3 3	0'30	2 34 33	9'55	15 9 31	45'2	2 37 36
2	3 10	0'28	2 38 23	9'57	15 27 30	44'6	2 41 33
3	3 16	0'26	2 42 13	9'60	15 45 13	44'0	2 45 29
4	3 22	0'23	2 46 3	9'62	16 2 40	43'3	2 49 26
5	3 28	0'21	2 49 55	9'64	16 19 51	42'6	2 53 22
6	3 32	0'19	2 53 46	9'67	16 36 47	41'9	2 57 19
7	3 37	0'16	2 57 39	9'69	16 53 25	41'2	3 1 15
8	3 40	0'14	3 1 32	9'71	17 9 47	40'5	3 5 12
9	3 43	0'12	3 5 25	9'74	17 25 51	39'8	3 9 8
10	3 46	0'09	3 9 19	9'76	17 41 38	39'1	3 13 5
11	3 48	0'07	3 13 14	9'78	17 57 7	38'3	3 17 2
12	3 49	0'05	3 17 9	9'81	18 12 18	37'6	3 20 58
13	3 50	0'03	3 21 4	9'83	18 27 10	36'8	3 24 55
14	3 51	0'00	3 25 1	9'85	18 41 44	36'0	3 28 51
15	3 50	0'02	3 28 57	9'88	18 55 59	35'2	3 32 48
16	3 50	0'04	3 32 55	9'90	19 9 54	34'4	3 36 44
17	3 48	0'07	3 36 53	9'92	19 23 30	33'6	3 40 41
18	3 46	0'09	3 40 51	9'95	19 36 46	32'8	3 44 38
19	3 44	0'11	3 44 50	9'97	19 49 43	31'9	3 48 34
20	3 41	0'13	3 48 50	9'99	20 2 19	31'1	3 52 31
21	3 38	0'16	3 52 50	10'01	20 14 35	30'2	3 56 27
22	3 34	0'18	3 56 50	10'04	20 26 30	29'4	4 0 24
23	3 29	0'20	4 0 51	10'06	20 38 4	28'5	4 4 20
24	3 24	0'22	4 4 53	10'08	20 49 17	27'6	4 8 17
25	3 18	0'25	4 8 55	10'10	21 0 8	26'7	4 12 13
26	3 12	0'27	4 12 58	10'12	21 10 38	25'8	4 16 10
27	3 5	0'29	4 17 1	10'14	21 20 47	24'9	4 20 7
28	2 58	0'31	4 21 5	10'16	21 30 33	24'0	4 24 3
29	2 51	0'33	4 25 9	10'18	21 39 56	23'0	4 28 0
30	2 42	0'35	4 29 14	10'20	21 48 58	22'1	4 31 56
31	2 34	0'36	4 33 19	10'22	21 57 36	21'1	4 35 53

METEOROLOGICAL OBSERVATIONS, MAY, 1893.

Day.	TEMPERATURE.			BAROM.	RAIN.	SUN.	WIND.
	Maximum.	Minimum.	Avg. 50 Yrs.	Mean.	FALL.	SHINE.	(Pressure lbs. to foot.)
				inches.	inches.	hours.	Directn. Pressure.
1	65'1	40'6	50	29'902	0'01	0'3	WSW lbs. 1'7
2	68'0	44'1	51	29'844	0'00	2'4	SSW 1'3
3	68'6	50'0	51	30'015	0'00	1'3	NNW 0'9
4	77'0	44'0	51	30'174	0'00	7'6	SSE 0'4
5	73'2	43'0	52	30'218	0'00	9'7	ENE 2'6
6	67'3	49'4	52	30'232	0'00	12'2	E 2'0
7	63'0	38'0	52	30'188	0'00	11'2	ENE 2'7
8	67'8	39'4	52	30'135	0'00	10'0	ENE 2'6
9	73'9	46'2	52	30'058	0'00	11'6	NE 3'8
10	73'9	44'6	52	30'093	0'00	13'1	NE 2'6
11	74'5	41'2	52	30'119	0'00	13'0	NE 1'4
12	80'4	42'3	52	29'959	0'00	5'9	W 1'3
13	76'2	49'2	52	29'993	0'00	12'3	NE 1'8
14	74'0	47'9	52	29'837	0'00	5'3	ENE 1'1
15	79'0	47'5	52	29'714	0'00	4'3	ENE 2'1
16	75'0	51'2	53	29'633	0'01	2'9	ENE 1'0
17	69'0	49'2	53	29'390	0'30	...	ENE 1'1
18	69'6	47'3	53	29'463	0'01	5'8	SSW 2'0
19	68'9	50'2	54	29'517	0'03	5'7	SSW 5'3
20	69'0	50'6	54	29'505	0'02	5'4	SSW 3'1
21	67'0	48'7	54	29'575	0'00	3'2	SSW 0'5
22	75'9	50'0	54	29'741	0'00	9'4	W 0'3
23	71'1	48'3	55	29'757	0'02	5'0	SSW 1'4
24	66'1	46'4	55	29'795	0'00	4'1	W 1'7
25	74'2	47'7	55	29'949	0'00	11'1	NW 1'6
26	63'5	52'5	55	30'043	0'00	0'4	NNW 1'5
27	68'0	49'0	56	30'054	0'00	0'8	N 2'0
28	74'1	44'8	56	30'000	0'00	3'9	N 1'0
29	75'4	50'2	56	29'875	0'08	3'4	NE 1'3
30	58'0	46'8	57	29'906	0'06	0'5	NNE 1'2
31	62'2	39'2	57	29'859	0'00	4'7	N 1'2

MEMORANDA.

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THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	South Morning.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.
h. m.	h. m.	h. m.	h. m.	h. m. s.	° ' "	° ' "	° ' "	D. h. m.
1	3 15	2 22	8 40	23 10	5 59 34	56 22	15 23	5 8
2	3 26	3 39	9 23	0 9 5	0 12 21	57 10	15 36	26 8
3	3 36	4 59	10 7	0 56 27	6 34 55	57 59	15 50	27 8
4	3 49	6 24	10 55	1 46 29	12 50 33	58 45	16 2	28 8
5	4 3	7 52	11 46	2 40 19	18 36 54	59 24	16 13	29 8
6	4 24	9 24	aft.	3 38 41	23 26 58	59 52	16 21	0 21
7	4 54	10 51	1 45	4 41 32	26 52 4	60 8	16 25	1 21
8	5 41	mrn.	2 55	5 47 26	28 28 8	60 10	16 25	2 21
9	6 45	0 2	3 55	6 53 49	28 3 39	60 1	16 23	3 21
10	8 6	0 54	5 57	7 57 55	25 44 1	59 41	16 17	4 21
11	9 34	1 28	5 54	8 57 54	21 48 26	59 14	16 10	5 21
12	11 3	1 52	6 46	9 53 18	16 42 22	58 44	16 2	6 21
13	aft.	2 8	7 34	10 44 41	10 50 54	58 11	15 53	7 21
14	1 49	2 21	8 19	11 33 10	4 35 51	57 38	15 44	8 21
15	3 8	2 32	9 3	12 19 58	1 44 27	57 6	15 35	9 21
16	4 26	2 42	9 47	13 6 17	7 54 7	56 34	15 26	10 21
17	5 44	2 54	10 32	13 53 11	13 38 38	56 4	15 18	11 21
18	7 2	3 7	11 18	14 41 31	18 43 59	55 36	15 11	12 21
19	8 19	3 23	mrn.	15 31 46	22 58 39	55 10	15 4	13 21
20	10 33	3 47	0 7	16 24 2	26 4 15	54 47	14 57	14 21
21	10 33	4 19	0 58	17 17 50	27 56 56	54 28	14 52	15 21
22	11 29	5 0	1 50	18 12 13	28 29 15	54 14	14 48	16 21
23	mrn.	5 58	2 42	19 5 59	27 41 5	54 6	14 46	17 21
24	0 7	7 4	3 33	19 58 9	25 37 31	54 6	14 46	18 21
25	0 34	8 16	4 21	20 48 7	22 27 11	54 15	14 48	19 21
26	0 53	9 31	5 2	21 35 52	18 20 15	54 13	14 53	20 21
27	1 9	10 46	5 51	22 21 47	13 27 1	55 1	15 1	21 21
28	1 19	aft.	6 33	23 6 38	7 57 20	55 38	15 11	22 21
29	1 31	1 15	7 15	23 51 24	2 1 7	56 24	15 24	23 21
30	1 41	2 31	7 58	0 37 12	4 10 35	57 16	15 38	24 21
31	1 53	3 52	8 43	1 25 18	10 23 53	58 11	15 53	25 21

Configurations of Jupiter's Satellites at 8h. P.M.

● 142

124 03

42 013

4 023

43 102

432 01

431 02

The Satellites will not be visible during the remainder of this month, owing to Jupiter's proximity to the Sun.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

May 1. Day breaks at 2h. 3m. morn., and Twilight ends at 9h. 51m. aft., the length of the Day being 14h. 46m.

May 5. Mean time of Sun's semidiameter passing the meridian, 1m. 6' 25".

May 7. Jupiter in conjunction with the Moon, 5h. morn. $4^{\circ} 59' 8''$.

May 12. Occultation of 37 Leonis; magnitude 6. The disappearance takes place at 7h. 55m. aft., $72''$ from the vertex.

May 16. Saturn in conjunction with the Moon, 5h. aft. $4^{\circ} 2' N$.

May 20. Mean time of Sun's semidiameter passing the meridian, 1m. 7' 45".

May 20. Occultation of B.A.C. 5347; magnitude 5. The disappearance takes place at 2h. 20m. morn., $145''$ from the vertex; the reappearance at 2h. 59m. morn., $193''$ from the vertex.

May 20. Mercury in superior conjunction with the Sun, 4h. aft.

May 23. Mercury at least distance from the Sun, 5h. morn.

May 28. Venus at greatest distance from the Sun, 6h. aft.

May 31. Occultation of ξ^1 Piscium; magnitude $4\frac{1}{2}$. The reappearance takes place at 2h. 40m. morn., $246''$ from the vertex.

In this month the Mornings increase $43m.$, and the Afternoons $43m.$

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

D.	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
1	1 23 18	23 42 33	21 47 43	4 17 8	13 19 24
6	1 56 7	0 1 45	22 1 31	4 21 51	13 18 8
11	2 32 29	0 21 17	22 15 8	4 26 38	13 16 57
16	3 12 47	0 41 18	22 28 35	4 31 29	13 15 52
21	3 56 41	1 1 18	22 41 51	4 36 22	13 14 54
26	4 42 33	1 21 48	22 54 57	4 41 18	13 14 3
31	5 27 43	1 42 39	23 7 53	4 46 15	13 13 20

APPARENT DECLINATION OF THE ABOVE PLANETS.

D.	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
1	6 11 30	0 36 17	15 3 55	20 48 44	5 24 12
6	9 52 10	0 57 33	13 58 23	21 0 42	5 17 11
11	13 43 38	0 47 10	12 50 41	21 12 15	5 10 48
16	17 32 6	2 36 25	11 41 9	21 23 21	5 5 7
21	20 56 42	4 28 48	10 30 8	21 33 58	5 0 13
26	23 33 8	6 22 54	9 17 57	21 44 3	4 56 8
31	25 4 59	8 17 12	8 5 1	21 53 35	4 52 56

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	☉	♂	♀	♂	♂	♂
° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
5	8 8	7 3	11 8	7 1	1 5	1 0
15	8 8	7 3	10 6	7 5	1 5	1 0
25	8 7	6 8	9 7	8 0	1 5	1 0

SEMI-DIAMETER OF SUN AND PLANETS.

D.	☉	♂	♀	♂	♂	♂
° ' "	° ' "	° ' "	° ' "	° ' "	° ' "	° ' "
5	15 53	2 8	11 0	4 5	15 4	8 5
15	15 51	2 5	10 0	4 7	15 3	8 4
25	15 49	2 6	9 1	5 0	15 2	8 3

Mean Longitude of Moon's ascending Node, May 1, $8^{\circ} 48' T$.

Day of		Time of High Water at the undermentioned Places—															
Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar).			
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.		
1	Tu	10 51	11 20	8 20	8 45	3 49	4 21	3 5	3 34	8 59	9 26	11 45	...	11 45	...	11 45	11 45
2	W	11 47	...	9 7	9 26	4 46	5 10	4 0	4 23	9 50	10 10	0 9	0 30	0 9	0 30	8 45	9 6
3	Th	0 9	0 30	9 44	10 2	5 30	5 50	4 42	5 0	10 30	10 50	0 47	1 5	0 47	1 5	9 27	9 46
4	F	0 49	1 7	10 19	10 38	6 9	6 28	5 18	5 35	11 9	11 30	1 23	1 41	1 23	1 41	10 21	10 21
5	S	1 26	1 45	10 57	11 16	6 48	7 7	5 54	6 14	11 51	...	2 0	2 18	2 0	2 18	10 38	10 57
6	S	2 3	2 22	11 36	11 59	7 27	7 47	6 34	6 54	0 11	0 32	2 37	2 56	2 37	2 56	11 16	11 37
7	M	2 42	3* 2	...	0 21	8 7	8 29	7 16	7 39	0 54	1 17	3 16	3 38	3 16	3 38	11 59	12 20
8	Tu	3 24	3 45	0 43	1 6	8 50	9 12	8 0	8 22	1 40	2 2	4 0	4 22	4 0	4 22	0 22	0 45
9	W	4 8	4 31	1 28	1 53	9 34	9 58	8 45	9 12	2 24	2 49	4 46	5 12	4 46	5 12	1 9	1 36
10	Th	4 56	5 21	2 19	2 46	10 23	10 48	9 38	10 5	3 15	3 42	5 41	6 11	5 41	6 11	2 4	2 33
11	F	5 49	6 19	3 14	3 45	11 14	11 43	10 36	11 13	4 10	4 41	6 43	7 17	6 43	7 17	3 4	3 37
12	S	6 52	7 27	4 22	5 1	...	0 18	11 55	...	5 15	5 50	7 58	8 38	7 58	8 38	4 17	4 57
13	S	8 5	8 47	5 47	6 31	0 57	1 43	0 36	1 17	6 32	7 10	9 24	10 4	9 24	10 4	5 38	6 14
14	M	9 29	10 5	7 8	7 40	2 26	3 4	1 53	2 25	7 45	8 18	10 36	11 6	10 36	11 6	6 46	7 16
15	Tu	10 37	11 9	8 9	8 35	3 38	4 9	2 55	3 23	8 48	9 16	11 34	11 59	11 34	11 59	7 44	8 11
16	W	11 37	...	9 0	9 23	4 36	5 3	3 50	4 16	9 43	10 7	...	0 23	9 43	10 7	8 38	9 4
17	Th	0 3	0 27	9 43	10 3	5 27	5 49	4 39	4 59	10 30	10 53	0 44	1 4	0 44	1 4	9 27	9 49
18	F	0 48	1 10	10 23	10 43	6 12	6 33	5 20	5 40	11 14	11 36	1 26	1 46	1 26	1 46	10 8	10 26
19	S	1 31	1 50	11 3	11 21	6 53	7 13	6 0	6 20	11 56	...	2 5	2 24	2 5	2 24	10 43	11 1
20	S	2 9	2 26	11 39	11 58	7 32	7 49	6 39	6 57	0 16	0 35	2 42	2 58	2 42	2 58	11 18	11 36
21	M	2 43	3 1	0 17	8 6	8 25	8 42	7 15	7 35	0 53	1 13	3 15	3 31	3 15	3 31	11 56	...
22	Tu	3 20	3 37	0 35	0 53	8 42	9 0	7 52	8 10	1 32	1 50	3 51	4 10	3 51	4 10	0 34	0 33
23	W	3 55	4 13	1 11	1 28	9 17	9 33	8 27	8 45	2 7	2 24	4 27	4 46	4 27	4 46	0 50	1 9
24	Th	4 30	4 48	1 45	2 4	9 50	10 8	9 3	9 23	2 41	3 0	5 4	5 24	5 4	5 24	1 28	1 48
25	F	5 6	5 27	2 25	2 45	10 28	10 47	9 44	10 5	3 21	3 41	5 48	6 12	5 48	6 12	2 11	2 33
26	S	5 49	6 12	3 7	3 31	11 7	11 29	10 29	10 58	4 3	4 27	6 36	7 3	6 36	7 3	2 57	3 23
27	S	6 38	7 4	3 58	4 29	11 54	...	11 28	...	4 52	5 20	7 31	8 5	7 31	8 5	3 51	4 24
28	M	7 34	8 4	5 1	5 35	0 25	0 57	0 3	0 35	5 49	6 21	8 38	9 12	8 38	9 12	4 56	5 28
29	Tu	8 36	9 11	6 12	6 48	1 31	2 8	1 7	1 38	6 54	7 26	9 47	10 18	9 47	10 18	5 59	6 22
30	W	9 46	10 16	7 19	7 46	2 43	3 15	2 7	2 34	7 56	8 25	10 46	11 12	10 46	11 12	6 56	7 28
31	Th	10 45	11 12	8 13	8 37	3 45	4 14	3 1	3 27	8 52	9 18	11 37	...	11 37	...	7 48	8 13

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
7	4 43M	11 23M	6 0A	3 33M	9 43M	3 5A	2 13M	7 33M	11 53M	5 21M	1 21A	9 21A	4 38A	10 15A	3 56M
14	3 58M	11 27M	6 56A	2 51M	9 43M	3 17A	1 54M	6 55M	11 53M	4 59M	1 1A	9 3A	4 9A	9 46A	3 27M
21	4 0M	0 0A	8 0A	2 39M	9 53M	3 31A	1 36M	6 46M	11 56M	4 36M	0 40A	8 44A	3 39A	9 17A	2 59M
28	4 14M	0 37A	9 0A	2 26M	9 6M	3 46A	1 17M	6 36M	11 55M	4 13M	0 19A	8 25A	3 10A	8 48A	2 30M

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.	DECL. N.
1	1 18 50.5	88 44 34
10	1 18 55.7	88 44 32
19	1 19 1.6	88 44 29
28	1 19 8.1	88 44 28

ANGULAR DISTANCE OF THE MOON FROM POLLUX.

D.	Position of Star.	6 P.M.	9 P.M.	Midnight.
13	West	50 10 26	51 52 12	53 33 44
14	West	63 38 18	65 18 18	66 58 45
15	West	76 52 25	78 30 45	80 8 52
16	West	89 53 26	91 30 10	93 6 43

Towards the end of May we shall find the constellations Draco, Hercules, Ophiuchus, and Scorpio on the meridian about midnight. Hercules contains a very splendid cluster of stars situated in R.A. 16h. 37m. 53s., and Decl. 36° 39' N. This, like most of the star-clusters, is condensed in the centre, and may be easily seen with very moderate telescopic aid; and a few days before and after the 5th of the month, when the

Moon is absent, it may, if the opportunity is taken of a very clear night, be seen with the naked eye, plainly, between the stars ζ and η Herculis. This cluster, discovered by Halley in 1714, is one of the most beautiful examples of those bodies to be seen in the heavens. With the great Refractor of the Lick Observatory the nebulous glow at the centre has been resolved into separate points.

DAY OF			Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.	SUN ENTERS CANCER 21d. 11h. M. SUMMER COMMENCES.		Rises.	Sets.	of the Year.	to end of Year.
1	8	F	 <i>St. Nicomede.</i> Lord Howe's naval victory, 1794.		3 50	8 5	152	213
2	8	S	 Garibaldi died, 1882; born, 4 July, 1807.		3 50	8 6	153	212
3	8	S	Second Sunday after Trinity. D. of York b. 1865.		3 49	8 7	154	211
4	8	M	Lord Wolseley b. 1833. Marshal Vaillant d. 1872.		3 48	8 8	155	210
5	8	Tu	<i>St. Boniface.</i> Urbano Rattazzi died, 1873.		3 48	8 9	156	209
6	8	W	Epsom Races; Derby Day. Ct. Cavour d. 1861.		3 47	8 10	157	208
7	8	Th	Matthew Davenport Hill, philanthropist, d. 1872.		3 46	8 10	158	207
8	8	F	Epsom Races; Oaks Day. Mahomet d. 632.		3 46	8 11	159	206
9	8	S	Charles Dickens died, 1870; born 7 Feb. 1812.		3 46	8 12	160	205
10	8	S	Third Sunday after Trinity. <i>St. Margaret, Scot.</i>		3 45	8 13	161	204
11	8	M	<i>St. Barnabas, Apostle and Martyr.</i>		3 45	8 14	162	203
12	8	Tu	William Cullen Bryant died, 1878.		3 45	8 14	163	202
13	8	W	G. Walter Thornbury died, 1876.		3 44	8 15	164	201
14	8	Th	Battle of Naseby, 1645. Battle of Marengo, 1800.		3 44	8 16	165	200
15	8	F	Magna Charta sealed, 1215. Wat Tyler killed, 1381.		3 44	8 16	166	199
16	8	S	Gen. Santa Anna, Mexican President, died, 1876.		3 44	8 17	167	198
17	8	S	Fourth Sunday after Trinity. <i>St. Alban.</i>		3 44	8 17	168	197
18	8	M	Battle of Waterloo, 1815. Abp. of York b. 1826.		3 44	8 17	169	196
19	8	Tu	Rev. C. H. Spurgeon born, 1834; d. Jan. 31, 1892.		3 44	8 18	170	195
20	8	W	Queen's Accession, 1837. <i>Transl. K. Edward.</i>		3 44	8 18	171	194
21	8	Th	Marquis of Dufferin born, 1826. Ascot; Cup Day.		3 44	8 18	172	193
22	8	F	B. R. Haydon, artist, died, 1846.		3 45	8 18	173	192
23	8	S	Cambridge Easter Term ends.		3 45	8 19	174	191
24	8	S	Fifth Sun. aft. Trinity. <i>S. John Bapt. Qr. Day.</i>		3 45	8 19	175	190
25	8	M	Wesleyan Conference fully established, 1784.		3 46	8 19	176	189
26	8	Tu	Gilbert White, of Selborne, died, 1793.		3 46	8 19	177	188
27	8	W	Joe Smith, Mormon prophet, died, 1844.		3 47	8 19	178	187
28	8	Th	CORONATION DAY. Marquis of Bristol born, 1834.		3 47	8 19	179	186
29	8	F	<i>St. Peter, Apostle and Martyr.</i> Sir P. Edlin b. '19.		3 48	8 19	180	185
30	8	S	G. W. Railway opened to Bristol, 1841.		3 48	8 18	181	184

PHASES OF THE MOON.

- ☉ New Moon 3d. 10h. 56m. Afternoon.
- ☾ First Quarter 10 1 14 Afternoon.
- ☾ Full Moon 18 7 6 Morning.
- ☾ Last Quarter 26 10 3 Morning.

Perigee 5d. 6h. m. 223,600 | Apogee 20d. 0h. a. 252,300

RAINFALL IN JUNE, 1893.

In this month rain fell on 8 days. The total fall for the month was 0.83 inch; below the average of ten years, 1871-80, by 1.65 inch.

MONTHLY NOTES.

June 1. Overseers to give notice between this day and the 20th to Voters who have not paid all Poor Rates due on January 5th.

15. Close season for freshwater fish ends.

20. On or before this day Overseers to fix on church doors the register of persons qualified to vote for Counties.

24. Midsummer Day. Sheriffs of City of London to be elected by the citizens.

25. Quarter Sessions begin.

THE SUN.

MEMORANDA.

Day.	Before Clock.		Hourly Variation of Equation of Time.	Right Ascension at Noon.		Hourly Variation of R. A.	Apparent Declination (Nth.) at Noon.		Hourly Variation (O's) Declination.	Sidereal Time at Noon.	
	M. S.	S.		H. M. S.	S.		° ' "	H. M. S.			
1	2	25	0'38	4	37 24	10°24	22 5 52	20°2	4	39 49	
2	2	16	0'40	4	41 30	10°26	22 13 45	19°2	4	43 46	
3	2	6	0'41	4	45 37	10°27	22 21 14	18°2	4	47 42	
4	1	56	0'43	4	49 43	10°29	22 28 20	17°3	4	51 39	
5	1	45	0'44	4	53 50	10°30	22 35 3	16°3	4	55 36	
6	1	34	0'46	4	57 58	10°31	22 41 21	15°3	4	59 33	
7	1	23	0'47	5	2 5	10°33	22 47 16	14°3	5	3 29	
8	1	12	0'48	5	6 13	10°34	22 52 46	13°3	5	7 25	
9	1	0	0'49	5	10 21	10°35	22 57 53	12°3	5	11 22	
10	0	49	0'50	5	14 30	10°35	23 2 35	11°2	5	15 18	
11	0	37	0'50	5	18 38	10°36	23 6 53	10°2	5	19 15	
12	0	24	0'51	5	22 47	10°37	23 10 46	9°2	5	23 11	
13	0	12	0'52	5	26 56	10°38	23 14 15	8°2	5	27 8	
14	After.	0'52	5	31 5	10°38	23 17 19	7°2	5	31 5		
15	0	13	0'53	5	35 14	10°39	23 19 59	6°1	5	35 1	
16	0	26	0'53	5	39 24	10°39	23 22 14	5°1	5	38 58	
17	0	39	0'54	5	43 33	10°39	23 24 4	4°1	5	42 54	
18	0	52	0'54	5	47 42	10°40	23 25 30	3°0	5	46 51	
19	1	5	0'54	5	51 52	10°40	23 26 31	2°0	5	50 47	
20	1	18	0'54	5	56 1	10°40	23 27 7	1°0	5	54 44	
21	1	31	0'54	6	0 11	10°40	23 27 18	0°0	5	58 40	
22	1	43	0'54	6	4 21	10°40	23 27 5	1°1	6	2 37	
23	1	56	0'54	6	8 30	10°39	23 26 27	2°1	6	6 34	
24	2	9	0'53	6	12 39	10°39	23 25 24	3°1	6	10 30	
25	2	22	0'53	6	16 49	10°39	23 23 56	4°2	6	14 27	
26	2	35	0'52	6	20 58	10°38	23 22 4	5°2	6	18 23	
27	2	47	0'52	6	25 7	10°38	23 19 47	6°2	6	22 20	
28	2	59	0'51	6	29 16	10°37	23 17 5	7°2	6	26 16	
29	3	12	0'50	6	33 25	10°36	23 13 59	8°3	6	30 13	
30	3	24	0'50	6	37 33	10°35	23 10 28	9°3	6	34 10	

METEOROLOGICAL OBSERVATIONS, JUNE, 1893.

Day.	TEMPERATURE.			BAROM.	RAIN-FALL.	SUN-SHINE.	WIND.	
	Maximum.	Minimum.	Avg. 50 Yrs.	Mean.	inches.	hours.	(Pressure lbs. to foot.)	Direction.
1	65.4	37.3	57	29.824	0.00	1.7	NW	lbs. 1.0
2	68.1	44.3	57	29.761	0.00	7.2	ESE	1.0
3	73.0	39.1	57	29.799	0.00	10.5	E	1.0
4	77.0	52.0	57	30.020	0.01	6.0	W	4.8
5	76.2	52.8	57	30.117	0.00	4.5	N	1.4
6	73.3	46.6	57	30.214	0.00	5.5	ENE	0.0
7	74.2	51.5	57	30.194	0.18	9.3	SE	1.3
8	74.7	49.3	57	30.135	0.00	9.9	ENE	1.5
9	76.8	47.2	58	30.122	0.00	8.3	ENE	1.5
10	69.2	51.2	58	30.169	0.00	2.7	NE	1.3
11	70.3	49.2	59	30.050	0.00	3.4	NE	1.2
12	68.5	51.4	59	29.921	0.00	5.6	ENE	1.2
13	79.8	51.7	59	29.794	0.00	12.5	ENE	2.2
14	83.2	52.6	59	29.682	0.00	11.2	E	2.2
15	84.7	57.2	59	29.613	0.00	8.0	E	1.7
16	88.8	53.0	59	29.985	0.00	13.3	NNE	1.0
17	88.8	54.2	59	30.125	0.00	13.3	E	0.7
18	85.1	54.1	59	30.106	0.00	13.6	ENE	1.4
19	91.0	50.6	59	29.774	0.00	9.7	NNE	1.8
20	66.7	49.2	60	29.660	0.02	...	NE	0.8
21	68.4	48.2	60	29.684	0.00	...	SE	0.5
22	78.2	49.2	61	29.309	0.00	4.9	SW	2.6
23	68.4	52.1	61	29.183	0.33	5.8	WSW	3.8
24	63.1	49.1	61	29.285	0.04	0.4	WSW	3.0
25	71.0	47.8	62	29.653	0.00	5.2	WSW	2.1
26	68.0	48.2	62	29.736	0.03	0.6	SE	0.3
27	74.7	55.6	62	29.322	0.21	0.6	SSW	2.7
28	75.8	55.5	62	29.548	0.01	9.5	SSW	9.2
29	75.9	54.3	62	29.842	0.00	1.6	SW	2.4
30	81.8	48.6	62	30.007	0.00	13.2	E	1.0

THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Morning.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.
H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
1	2 6	5 19	9 32	2 17	16 20 10n	59 5	16 8	26 21
2	2 25	6 49	10 26	3 13 29	21 34 55	59 53	16 21	27 21
3	2 51	8 20	11 26	4 15 13	25 38 19	60 30	16 31	28 21
4	3 29	9 41	aft.	5 21 24	28 0 15	60 52	16 37	0 13
5	4 26	10 44	1 38	6 29 42	28 19 32	60 56	16 38	1 13
6	5 43	11 27	2 44	7 36 51	26 33 5	60 43	16 34	2 13
7	7 14	11 55	3 45	8 40 9	22 57 4	60 16	16 27	3 13
8	8 47	mrn.	4 41	9 38 25	17 59 15	59 38	16 17	4 13
9	10 15	0 14	5 31	10 31 55	12 9 18	58 54	16 5	5 13
10	11 39	0 27	6 18	11 21 42	5 52 57n	58 8	15 52	6 13
11	aft.	0 40	7 2	12 9 6	0 29 20s	57 23	15 40	7 13
12	2 16	0 51	7 46	12 55 27	6 41 14	56 42	15 28	8 13
13	3 33	1 3	8 30	13 41 54	12 29 2	56 4	15 18	9 13
14	4 51	1 14	9 16	14 29 26	17 40 8	55 32	15 9	10 13
15	6 8	1 30	10 3	15 18 46	22 2 11	55 4	15 2	11 13
16	7 22	1 50	10 53	16 10 8	25 23 19	54 41	14 56	12 13
17	8 29	2 20	11 45	17 3 17	27 33 9	54 23	14 51	13 13
18	9 25	2 58	mrn.	17 57 25	28 24 36	54 10	14 47	14 13
19	10 6	3 51	0 37	18 51 22	27 55 37	54 2	14 45	15 13
20	10 37	4 55	1 28	19 43 59	26 9 42	53 59	14 44	16 13
21	10 59	6 5	2 17	20 34 28	23 14 53	54 2	14 45	17 13
22	11 15	7 19	3 4	21 22 35	19 21 44	54 13	14 48	18 13
23	11 28	8 33	4 30	22 8 33	14 41 28	54 31	14 53	19 13
24	11 38	9 45	4 30	22 53 1	9 24 45	54 58	15 0	20 13
25	11 48	10 58	5 11	23 36 52	3 41 42s	55 34	15 10	21 13
26	11 59	aft.	6 52	0 21 10	17 37n	56 18	15 22	22 13
27	mrn.	1 29	6 55	1 7 8	8 21 42	57 9	15 36	23 13
28	0 12	2 51	7 21	1 56 5	14 16 0	58 5	15 51	24 13
29	0 26	4 17	8 11	2 49 20	19 40 54	59 2	16 7	25 13
30	0 46	5 48	9 7	3 47 54	24 10 42n	59 55	16 21	26 13

Configurations of Jupiter's Satellites.

The Satellites will not be visible in this month, owing to Jupiter's proximity to the Sun.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

June 1. In this month there is no real night, but either daylight or twilight; the length of the Day being 16h. 15m.

June 4. Jupiter in conjunction with the Moon, 1h. *mrn.* γ 5° 8' S.

June 4. Jupiter in conjunction with the Sun, 2h. *aft.*

June 5. Mean time of Sun's semidiameter passing the meridian, 1m. 8.4s.

June 5. Mercury in conjunction with the Moon, 4h. *mrn.* γ 2° 56' S.

June 12. Occultation of δ Virginis; magnitude 6. The disappearance takes place at *gh. om. aft.*, 174° from the vertex.

June 12. Saturn in conjunction with the Moon, *gh. aft.* γ 4° 1' N.

June 20. Mean time of Sun's semidiameter passing the meridian, 1m. 8.8s.

June 21. Sun enters Cancer: Summer commences, 1h. *mrn.*

June 22. Saturn stationary, 8h. *mrn.*

June 23. Mercury at greatest elongation (25°) East, *gh. mrn.*

June 30. Venus in conjunction with the Moon, *gh. aft.* γ 6° 20' S.

In this month the Mornings increase 2m. and the Afternoons 13m.

MORNING AND EVENING STARS.

δ MERCURY is an evening star, setting, in the middle of the month, an hour and three-quarters after the Sun. May be observed on the 15th near the 3rd magnitude star δ Gemini.

γ VENUS is a morning star, not far from Aldebaran at the end of the month.

δ MARS is also a morning star; may be observed, in the earlier days of the month, near to the stars ϕ and ψ Aquarii.

γ JUPITER becomes a morning star towards the end of the month. It may be seen to the North-east of Aldebaran, and not far from ζ Tauri. Except at the end of the month, it is too near the Sun for easy observation.

γ SATURN may be observed in the South-west soon after Sunset near the 4th magnitude star θ Virginis.

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	γ MERCURY.			γ VENUS.			δ MARS.			γ JUPITER.			γ SATURN.		
D.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
5	6	9	42	2	3	54	23	20	38	4	51	13	13	12	45
10	6	47	1	2	25	32	23	33	11	4	56	12	13	12	19
15	7	18	52	2	47	37	23	45	33	5	6	10	13	12	2
20	7	44	53	3	10	9	23	57	42	5	6	7	13	11	54
25	8	4	41	3	33	12	0	9	39	5	11	3	13	11	55
30	8	17	42	3	56	44	0	21	21	5	15	56	13	12	6

APPARENT DECLINATION OF THE ABOVE PLANETS

	γ			γ			δ			γ			γ		
D.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
5	25	31	16n	10	10	10n	6	51	45s	22	2	31n	4	50	39s
10	25	2	26	12	0	17	5	38	34	22	10	52	4	49	19
15	23	52	52	13	46	5	4	25	47	22	18	35	4	48	56
20	22	16	58	15	26	7	3	13	44	22	25	40	4	49	30
25	20	28	11	16	58	54	2	2	48	22	32	7	4	51	2
30	18	39	31n	18	22	57n	0	53	22s	22	37	56n	4	53	31s

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	⊙	♂	♀	♂	♂	h
5	8 7	7 7	8 9	8 6	1 5	1 0
15	8 7	9 2	8 3	9 2	1 5	1 0
25	8 7	11 2	7 8	9 8	1 5	0 9

SEMI-DIAMETER OF SUN AND PLANETS.

⊙	♂	♀	♂	♂	♂
15 48	2 9	8 4	5 4	15 2	8 8
15 47	3 5	7 8	5 7	15 2	8 1
15 46	4 2	7 3	6 1	15 3	7 9

Mean Longitude of Moon's ascending Node, June 1, γ 9° γ .

Day of		Time of High Water at the undermentioned Places—															
Month.	Week.	LONDON BRIDGE		LIVERPOOL		BRISTOL		HULL		GREENOCK		LEITH		DUBLIN (Bar)			
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
1	F	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
2	S	11 39	0 3	9 0	9 22	4 38	5 3	3 52	4 16	9 43	10 7	0 1	0 23	8 38	9 4	9 28	9 51
3	S	0 3	0 26	9 44	10 6	5 27	5 50	4 38	5 0	10 31	10 56	0 43	1 5	9 28	9 51		
4	M	0 49	1 13	10 29	10 54	6 15	6 40	5 22	5 46	11 21	11 47	1 29	1 52	10 13	10 35		
5	Tu	1 37	2 0	11 18	11 42	7 4	7 29	6 11	6 36	0 13	0 13	2 15	2 39	10 59	11 22		
6	W	2 24	2 47	...	0 9	7 53	8 17	7 0	7 26	0 38	1 4	3	3 25	11 46	...		
7	Th	3 11	3 36	0 34	1 0	8 42	9 7	7 52	8 17	1 31	1 57	3 51	4 17	0 13	0 40		
8	F	4 2	4 29	1 26	1 52	9 32	9 57	8 43	9 10	2 22	2 49	4 44	5 12	1 7	1 35		
9	S	4 56	5 22	2 20	2 47	10 24	10 50	9 39	10 6	3 16	3 43	5 40	6 10	2 4	2 33		
10	S	5 49	6 18	3 12	3 40	11 14	11 39	10 33	11 5	4 9	4 36	6 40	7 11	3 1	3 31		
11	M	6 46	7 18	4 9	4 42	0 38	0 6	11 40	...	5 4	5 34	7 43	8 17	4 3	4 37		
12	Tu	7 48	8 17	5 13	5 49	0 9	1 9	0 16	0 48	6 2	6 34	8 50	9 25	5 9	5 40		
13	W	8 49	9 22	6 25	6 56	1 45	2 20	1 19	1 50	7 6	7 34	9 59	10 27	6 11	6 36		
14	Th	9 53	10 25	7 26	7 56	2 52	3 24	2 15	2 42	8 4	8 35	10 53	11 22	7 3	7 32		
15	F	10 55	11 24	8 22	8 49	3 56	4 23	3 10	3 37	9 2	9 31	11 46	...	7 58	8 26		
16	S	11 53	...	9 14	9 39	4 51	5 18	4 5	4 30	9 58	10 24	0 13	0 36	8 53	9 20		
17	S	0 19	0 43	10 1	10 21	5 44	5 18	4 55	5 17	10 49	11 11	1 0	1 22	9 45	10 6		
18	M	1 6	1 28	10 42	11 3	6 30	6 52	5 37	5 58	11 34	11 56	1 44	2 4	10 25	10 45		
19	Tu	1 49	2 10	11 22	11 42	7 13	7 33	6 20	6 40	...	0 17	2 24	2 43	11 3	11 21		
20	W	2 29	2 47	...	0 1	7 52	8 10	7 0	7 19	0 37	0 56	3 2	3 19	11 39	11 59		
21	Th	3 5	3 24	0 21	0 40	8 29	8 47	7 39	7 57	1 17	1 37	3 38	3 56	...	0 19		
22	F	3 42	4 0	0 58	1 16	9 5	9 22	8 15	8 33	1 55	2 12	4 15	4 33	0 38	0 56		
23	S	4 18	4 35	1 33	1 52	9 39	9 57	8 50	9 10	2 29	2 48	4 52	5 11	1 15	1 35		
24	S	4 53	5 11	2 9	2 29	10 14	10 32	9 28	9 48	3 6	3 25	5 29	5 51	1 53	2 14		
25	M	5 31	5 52	2 47	3 7	10 50	11 8	10 7	10 28	3 43	4 3	6 12	6 35	2 35	2 56		
26	Tu	6 12	6 33	3 27	3 49	11 27	11 47	10 51	11 17	4 23	4 45	6 57	7 21	3 18	3 41		
27	W	6 56	7 19	4 14	4 41	...	0 10	11 45	...	5 8	5 32	7 48	8 17	4 8	4 36		
28	Th	7 46	8 13	5 9	5 40	0 37	1 5	0 15	0 44	5 58	6 26	8 46	9 17	5 5	5 33		
29	F	8 41	9 12	6 13	6 49	1 36	2 9	1 12	1 40	6 56	7 27	9 49	10 20	6 1	6 30		
30	S	9 46	10 18	7 20	7 50	2 44	3 16	2 9	2 36	7 59	8 29	10 47	11 16	6 57	7 26		
		10 49	11 20	8 20	8 50	3 49	4 21	3 5	3 35	9 0	9 32	11 44	...	7 56	8 27		

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
4	4 38m	1 10a	9 42a	2 15m	9 8m	4 1a	1 0m	6 27m	11 54m	3 52m	11 58m	8 6a	2 41a	8 20a	2 3m
11	5 8m	1 35a	10 2a	2 3m	9 11m	4 19a	0 41m	6 17m	11 53m	3 30m	11 38m	7 46a	2 13a	7 52a	1 35m
18	5 34m	1 48a	10 2a	1 53m	9 14m	4 35a	0 22m	6 6m	11 50m	3 8m	11 17m	7 26a	1 45a	7 24a	1 7m
25	5 54m	1 50a	9 46a	1 44m	9 19m	4 54a	0 4m	5 56m	11 48m	2 46m	10 57m	7 8a	1 17a	6 56a	0 39m

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.			DECL. N.		
	H.	M.	S.	°	'	"
1	1	19	11.7	88	44	27
10	1	19	19.5	88	44	26
19	1	19	28.5	88	44	26
28	1	19	37.1	88	44	26

ANGULAR DISTANCE OF THE MOON FROM ANTARES.

D.	Position of Star.	6 P.M.		9 P.M.		Midnight.	
		°	'	°	'	°	'
10	East	76	10 37	74	29 21	72	48 26
11	East	62	49 26	61	10 40	59	32 11
12	East	49	47 10	48	10 35	46	34 16
13	East	37	1 17	35	26 35	33	52 5

In the last week of June the constellations Draco, Lyra, a portion of Hercules, Scutum Sobieski, and a part of Sagittarius will south about midnight.

In Sagittarius there is a notable and very extensive Nebula, known as the "Horse-shoe," from its peculiar shape. It will be found in R.A. 18h. 14m. 30s., and Decl. 15° 15' S. The spectroscopic shows this Nebula to consist of a mass of incandescent gas. Professor Holden says that one arm of the Nebula has changed its position since Herschel's

time. In shape it somewhat resembles the great Nebula in Andromeda.

In Sagittarius is a globular cluster of very small stars, densely crowded, lying halfway between β Capricorni and Antares, to be seen only with difficulty in small telescopes. Owing to its great southern declination there is but little chance of seeing this Nebula except when southing. On the evenings in the beginning and end of the month, when there is no Moon, it can be best observed.

DAY OF			Fasts and Festivals. Remarkable Days—Events. SUN ENTERS LEO 22d. 10h. A.	THE SUN		DAYS	
M.	Light and Dark.	W.		Rise.	Set.	of the Year.	to end of Year.
1	☐	S	Sixth Sun. aft. Trinity. Dominion Day (Canada). <i>Visitation. B.V.M.</i> Sir Robert Peel died, 1850.	3 49	8 18	182	183
2	☐	M	Dog Days begin. F. Overbecke, painter, b. 1789.	3 50	8 18	183	182
3	☐	Tu	<i>Trans. St. Martin.</i> Independence Day, U.S.A.	3 51	8 17	184	181
4	☐	W	Princess of Wales Stakes.	3 51	8 17	185	180
5	☐	Th	Old Midsummer Day. Samuel Lover died, 1868.	3 52	8 16	186	179
6	☐	F	Oxford Trin. Term ends. <i>Trans. Thomas à Becket.</i>	3 53	8 16	187	178
7	☐	S		3 54	8 15	188	177
8	☐	S	Seventh Sunday after Trinity.	3 55	8 15	189	176
9	☐	M	Queen of Sweden b. 1836. Edm. Burke d. 1797.	3 56	8 14	190	175
10	☐	Tu	Louis Daguerre, photographer, died, 1851.	3 57	8 13	191	174
11	☐	W	W. E. Forster born, 1818; died, 5 April, 1886.	3 58	8 13	192	173
12	☐	Th	Crimea evacuated, 1856. Tom Taylor d. 1880.	3 59	8 12	193	172
13	☐	F	Berlin Treaty, "Peace with Honour," 1878.	4 0	8 11	194	171
14	☐	S	Archbishop of Canterbury born, 1829.	4 1	8 10	195	170
15	☐	S	Eighth Sunday after Trinity. <i>St. Swithin.</i>	4 2	8 9	196	169
16	☐	M	Hegira, or Flight of Mahomet, 622.	4 3	8 8	197	168
17	☐	Tu	Franco-Prussian War commenced, 1870.	4 4	8 7	198	167
18	☐	W	Bishop of Ely born, 1825.	4 6	8 6	199	166
19	☐	Th	Matthew Flinders, navigator, died, 1814.	4 7	8 5	200	165
20	☐	F	<i>St. Margaret.</i> Sandown Races; Eclipse Stakes.	4 8	8 4	201	164
21	☐	S	Robert Burns died, 1796; born, 25 Jan. 1759.	4 10	8 2	202	163
22	☐	S	Ninth Sun. after Trinity. <i>St. Mary Magdalene.</i>	4 11	8 1	203	162
23	☐	M	Duke of Devonshire born, 1833.	4 12	8 0	204	161
24	☐	Tu	Dr. N. Lardner died, 1768.	4 14	7 59	205	160
25	☐	W	<i>S. James, Ap. & M.</i> Rt. Hon. A. J. Balfour b. 1848.	4 15	7 57	206	159
26	☐	Th	<i>St. Anne.</i> [d. 6 Oct. 1891.	4 16	7 56	207	158
27	☐	F	<i>St. Joseph of Arimathea.</i> C. S. Parnell b. 1844;	4 18	7 54	208	157
28	☐	S	Robespierre guillotined, 1794. Ld. Bateman b. '26.	4 19	7 53	209	156
29	☐	S	Tenth Sunday after Trinity.	4 21	7 52	210	155
30	☐	M	Relief of Derry, 1689. Thos. Gray, poet, d. 1771.	4 22	7 50	211	154
31	☐	Tu	William Thomas Lowndes, bibliographer, d. 1843.	4 24	7 48	212	153

PHASES OF THE MOON.

- New Moon 3d. 5h. 45m. Morning.
- ☾ First Quarter 9 10 15 Afternoon.
- Full Moon 17 10 3 Afternoon.
- ☾ Last Quarter 25 9 7 Afternoon.

Perigee 3d. 2h. A. 222,000 | Apogee 17d. 3h. A. 252,500
In Perigee 31d. 11h. A. 222,300.

RAINFALL IN JULY, 1893.

In this month rain fell on 18 days. The total fall for the month was 3.33 inches; above the average of ten years, 1871-80, by 0.70 inch.

MONTHLY NOTES.

July 1. Special Sessions for Licences to deal in Game to be held this month.

5. Dividends due.

9. Fire Insurances must be paid.

— Glasgow Fair Week.

14. Glasgow Fair Saturday.

20. Rates and Taxes due January 5th must be paid on or before this day by Parliamentary Voters to prevent disqualification.—Last day for County Electors to send in their claims to vote.

THE SUN.

MEMORANDA.

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THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Mornings.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semi-diameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 3h. A.M.
H. M.	H. M.	H. M.	H. M. S.	H. M. S.	D. M.	D. M.	D. M.	D. M.	
1	17	7 14	10 9	4 51 51	2° 15' 11"	60 40	16 33	27 13	20143
2	6	8 27	11 16	5 59 44	28 26 19	61 10	16 42	28 13	21304
3	15	9 20	aft.	7 8 35	27 28 51	61 21	16 45	0 6	23204
4	43	9 54	1 29	8 15 4	24 28 10	61 13	16 42	1 6	30124
5	19	10 17	2 29	9 17 0	19 48 2	60 46	16 35	2 6	31024
6	7 51	10 34	3 23	10 13 50	14 0 40	60 5	16 24	3 6	20134
7	9 20	10 46	4 13	11 6 17	7 37 15	59 14	16 10	4 6	12034
8	10 43	10 58	4 59	11 55 35	1 3 29	58 20	15 55	5 6	01243
9	aft.	11 9	5 44	12 43 7	5 20 52	57 26	15 41	6 6	21402
10	1 22	11 21	6 28	13 30 9	11 20 31	56 36	15 27	7 6	34201
11	2 41	11 37	7 14	14 17 46	16 42 49	55 52	15 15	8 6	43020
12	3 59	11 55	8 1	15 6 47	21 16 20	55 16	15 5	9 6	43102
13	5 13	mn.	8 50	15 57 37	24 50 18	54 47	14 57	10 6	42013
14	6 22	0 21	9 41	16 50 13	27 14 57	54 25	14 51	11 6	42103
15	7 22	0 56	10 33	17 44 1	28 22 57	54 9	14 47	12 6	41013
16	8 6	1 44	11 24	18 37 57	28 11 1	54 0	14 44	13 6	41032
17	8 41	2 45	mn.	19 30 55	26 41 4	53 57	14 44	14 6	32401
18	9 4	3 54	0 14	20 11 58	23 59 49	53 59	14 44	15 6	30401
19	9 21	5 7	1 1	21 10 41	20 17 23	54 7	14 46	16 6	24302
20	9 35	6 22	1 46	21 57 7	15 45 21	54 20	14 50	17 6	20134
21	9 47	7 34	2 29	22 41 46	10 35 22	54 39	14 55	18 6	21034
22	9 57	8 47	3 10	23 25 23	4 58 31	55 4	15 2	19 6	01234
23	10 6	10 0	3 51	0 8 56	0 54 29	55 37	15 11	20 6	10324
24	10 18	11 15	4 32	0 53 29	6 52 34	56 16	15 22	21 6	23014
25	10 30	aft.	5 15	1 40 17	12 42 58	57 2	15 34	22 6	31204
26	10 48	1 54	6 2	2 30 36	18 9 41	57 52	15 48	23 6	24302
27	11 12	3 21	6 54	3 25 34	22 51 59	58 45	16 2	24 6	42010
28	11 50	4 47	7 51	4 25 47	26 24 11	59 37	16 16	25 6	42103
29	mn.	6 5	8 54	5 30 46	28 18 48	60 23	16 29	26 6	40213
30	0 48	7 10	1 6	38 28 14	4 60 57	16 38	27 6	27 6	41032
31	2 7	7 49	11 7	7 45 50	26 3 22	61 15	16 43	28 6	42301

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

July 1. There is no real night until after the 20th of this month.

July 3. Earth at greatest distance from the Sun, 5h. *morn.*

July 5. Mean time of Sun's semi-diameter passing the meridian, 1m. 8⁴s.

July 6. Mercury at greatest distance from the Sun, 5h. *morn.*

July 20. Mean time of Sun's semi-diameter passing the meridian, 1m. 7⁴s.

July 20. Venus and Jupiter in conjunction, 8h. *morn.* 9° 0' 51" S.

July 20. Mercury in inferior conjunction with the Sun, 10h. *aft.*

July 26. Occultation of 19 Arietis; magnitude 6. The reappearance takes place at oh. 25m. *morn.*, 284' from the vertex.

July 26. Mars at least distance from the Sun, 4h. *aft.*

July 27. Occultation of ζ Arietis; magnitude 4 $\frac{1}{2}$. The disappearance takes place at 3h. 40m. *morn.*, 156' from the vertex; and the reappearance at 4h. 18m. *morn.*, 221' from the vertex.

July 28. Occultation of 36 Tauri; magnitude 6. The reappearance takes place at oh. 20m. *morn.*, 234' from the vertex.

In this month the Mornings decrease 35m., and the Afternoons 30m.

MORNING AND EVENING STARS.

γ MERCURY is an evening star in the early portion of the month. Too near the Sun for observation in the middle of the month. Becomes a morning star at the end of the month.

γ VENUS is a morning star; very near to Jupiter on the morning of the 20th. Both rising about 1h. 30m. *morn.*

δ MARS is improving his position; may be observed about midnight, soon after rising, South of the stars ϵ and δ Piscium.

λ JUPITER is a morning star, in Taurus, and may be seen near to the 3rd magnitude star ζ Tauri.

ι SATURN is an evening star; will be found between the stars Spica and θ Virginis.

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	γ MERCURY.			γ VENUS.			δ MARS.			λ JUPITER.			ι SATURN.		
D.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.	H.	M.	S.
5	8	23	19	4	20	46	0	32	47	5	20	46	13	12	25
10	8	21	4	4	45	16	0	43	55	5	25	33	13	12	54
15	8	11	40	5	10	12	0	54	44	5	30	15	13	13	32
20	7	57	59	5	35	29	1	5	12	5	34	52	13	14	18
25	7	45	15	6	1	4	1	15	16	5	39	23	13	15	13
30	7	39	7	6	26	51	1	24	51	5	43	47	13	16	16

APPARENT DECLINATION OF THE ABOVE PLANETS.

	γ	γ	δ	λ	ι
D.	17	4	19	22	4
5	17	4	19	22	4
10	15	55	20	20	39
15	15	25	58	21	28
20	15	38	44	22	4
25	16	27	19	22	25
30	17	34	52	21	26

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	$\odot$	γ	γ	δ	λ	ι
D.	"	"	"	"	"	"
5	8	7	13	5	7	3
15	8	7	15	2	6	9
25	8	7	14	4	6	6

SEMI-DIAMETER OF SUN AND PLANETS.

D.	$\odot$	γ	γ	δ	λ	ι
D.	"	"	"	"	"	"
5	15	46	5	1	6	9
15	15	46	5	7	6	5
25	15	47	5	4	6	2

Mean Longitude of Moon's ascending Node, July 1, 5° 34' T.

Day of

Time of High Water at the undermentioned Places—

Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar)	
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
1	S	11 53	...	9 18	9 46	4 52	5 22	4 6	4 34	10 2	10 32	11 0	11 47	8 58	9 29
2	M	0 22	0 51	10 12	10 39	5 52	6 21	5 2	5 28	11 2	11 31	1 7	1 35	9 57	10 22
3	Tu	1 18	1 46	11 7	11 35	6 49	7 17	5 55	6 24	...	0 1	2 1	2 28	10 47	11 15
4	W	2 13	2 40	...	0 3	7 46	8 12	6 53	7 20	0 31	0 58	2 55	3 20	11 41	...
5	Th	3 6	3 33	0 31	0 56	8 39	9 3	7 48	8 13	1 27	1 53	3 47	4 13	0 9	0 35
6	F	3 58	4 25	1 23	1 47	9 29	9 52	8 39	9 4	2 19	2 43	4 39	5 5	1 2	1 28
7	S	4 50	5 14	2 11	2 35	10 16	10 39	9 29	9 54	3 7	3 31	5 30	5 56	1 54	2 20
8	S	5 38	6 2	2 58	3 23	11 1	11 23	10 17	10 43	3 54	4 19	6 22	6 50	2 45	3 11
9	M	6 27	6 51	3 45	4 8	11 44	...	11 9	11 35	4 41	5 3	7 15	7 39	3 30	3 59
10	Tu	7 15	7 39	4 32	4 56	0 5	0 28	...	0 4	5 25	5 48	8 7	8 35	4 26	4 54
11	W	8 4	8 31	5 28	6 1	0 54	1 24	0 33	1 2	6 16	6 46	9 5	9 38	5 23	5 51
12	Th	9 1	9 33	6 35	7 11	1 57	2 30	1 31	1 58	7 15	7 48	10 9	10 39	6 19	6 49
13	F	10 9	10 43	7 49	8 19	3 7	3 44	2 28	3 1	8 24	8 58	11 13	11 43	7 23	7 51
14	S	11 18	11 51	8 45	9 18	4 19	4 50	3 33	4 4	9 30	10 1	...	0 13	8 25	8 56
15	S	...	0 22	9 45	10 9	5 21	5 49	4 34	5 1	10 29	10 56	0 41	1 6	9 25	9 53
16	M	0 49	1 13	10 30	10 50	6 15	6 39	5 25	5 46	11 20	11 42	1 30	1 53	10 15	10 31
17	Tu	1 36	1 57	11 10	11 29	7 1	7 21	6 7	6 28	...	0 4	2 13	2 32	10 52	11 10
18	W	2 17	2 35	11 48	...	7 40	7 58	6 47	7 6	0 24	0 43	2 50	3 8	11 27	11 44
19	Th	2 52	3 10	0 6	0 25	8 15	8 33	7 24	7 42	1 1	1 20	3 24	3 41	...	0 2
20	F	3 27	3 44	0 42	0 58	8 49	9 5	7 59	8 15	1 39	1 55	3 58	4 15	0 20	0 37
21	S	4 1	4 17	1 14	1 31	9 21	9 37	8 31	8 48	2 11	2 27	4 31	4 49	0 54	1 12
22	S	4 34	4 51	1 48	2 4	9 53	10 9	9 6	9 22	2 45	3 1	5 8	5 24	1 30	1 47
23	M	5 6	5 22	2 21	2 38	10 25	10 42	9 40	9 57	3 18	3 34	5 42	6 1	2 6	2 24
24	Tu	5 40	6 0	2 55	3 14	10 58	11 14	10 15	10 34	3 51	4 10	6 20	6 41	2 43	3 2
25	W	6 19	6 40	3 34	3 55	11 33	11 53	10 57	11 22	4 30	4 51	7 3	7 27	3 24	3 47
26	Th	7 2	7 25	4 18	4 45	...	0 5	11 49	...	5 13	5 36	7 52	8 21	4 12	4 40
27	F	7 50	8 19	5 15	5 52	0 41	1 11	0 19	0 50	6 4	6 37	8 52	9 29	5 11	5 43
28	S	8 53	9 32	6 34	7 16	1 48	2 29	1 22	1 57	7 14	7 53	10 8	10 44	6 18	6 54
29	S	10 11	10 52	7 54	8 33	3 12	3 53	2 33	3 9	8 33	9 13	11 21	11 57	7 31	8 9
30	M	11 34	...	9 9	9 39	4 34	5 11	3 48	4 25	9 51	10 24	...	0 32	8 46	9 21
31	Tu	0 12	0 43	10 8	10 35	5 44	6 15	4 55	5 24	10 56	11 27	1 0	1 29	9 52	10 20

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ♀				VENUS ♀				MARS ♂				JUPITER ♃				SATURN ♄			
	Rises	Souths	Sets	h. m.	Rises	Souths	Sets	h. m.	Rises	Sths.	Sets	h. m.	Rises	Souths	Sets	h. m.	Rises	Sths.	Sets	h. m.
9	5 58m	1 39a	9 20a	1 38m	9 24m	5 10a	11 40a	5 44m	11 47m	11 47m	11 47m	2 24m	10 36m	6 48a	0 51a	6 29a	0 11m			
16	5 42m	1 12a	8 42a	1 35m	9 31m	5 27a	11 20a	5 32m	11 43m	11 43m	11 43m	2 31m	10 15m	6 27a	0 24a	6 2a	11 40a			
23	5 7m	0 32a	7 57a	1 34m	9 38m	5 42a	11 1a	5 20m	11 37m	11 37m	11 37m	1 41m	9 54m	6 7a	11 59m	5 36m	11 13a			
30	3 29m	11 7m	6 45a	1 43m	9 54m	6 5a	10 20a	4 53m	11 24m	11 24m	11 24m	0 58m	9 12m	5 26a	11 7m	4 43a	10 19a			

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.			DECL. N.		
	h.	m.	s.	°	'	"
1	1	19	40.4	88	44	26
10	1	19	49.1	88	44	26
19	1	19	58.2	88	44	27
28	1	20	7.2	88	44	28

ANGULAR DISTANCE OF THE MOON FROM SPICA VIRGINIS.

	Position of Star.	6 P.M.		9 P.M.		Midnight.	
D.		°	'	°	'	°	'
12	West	30	53 13	32	25 7	33	56 49
13	West	43	3 32	44	34 7	46	4 34
14	West	55	4 48	56	34 28	58	4 3
15	West	66	59 58	68	29 4	69	58 7

In the middle of July the constellations Cygnus, Vulpecula, Aquila, and Sagittarius will be on the meridian about midnight.

The Annular Nebula in Lyra, situated between β and γ , is the best example of the Annular Nebulae; the heavens containing, as far as is at present known, comparatively few examples of this class. It requires a rather good telescope to see it well: it is in R.A. 18h. 49m. 37s., and Decl. 32° 54' N.

It exhibits a spectrum as if composed of an incandescent gas.

There is also a globular cluster in Lyra, between the eastern yoke of Lyra's frame and the Swan's Head: it was formerly considered a Nebula, until resolved into stars by Sir William Herschel in 1784. It is in R.A. 19h. 12m. 25s., Decl. 30° 0' N. The best nights for the observation of these objects are those at the beginning and end of the month.

DAY OF				Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.				Rises.	Sets.	of the Year.	to end of Year.
				SUN ENTERS VIRGO 23d. 5h. M.		H. M.	H. M.		
1	☾	W		<i>Lammas Day.</i> Battle of the Nile, 1798.		4 25	7 47	213	152
2	☾	Th		Goodwood Races; Cup Day. Capt. Marryat d. 1848.		4 27	7 45	214	151
3	☾	F		Mr. Speaker Peel b. 1829. Earl Aberdeen b. 1847.		4 28	7 44	215	150
4	☾	S		William Edmonston Aytoun died, 1865.		4 30	7 42	216	149
5	☾	S		Eleventh Sunday after Trinity. Old St. James's.		4 31	7 40	217	148
6	☾	M		<i>Transfig. Lammas Monday.</i> Holiday. R.A. closes.		4 33	7 38	218	147
7	☾	Tu		<i>Name of Jesus.</i> J. Berzelius, chemist, died, 1848.		4 34	7 37	219	146
8	☾	W		Geo. Canning d. 1827. Sir Arth. Otway b. 1822.		4 36	7 35	220	145
9	☾	Th		Sir Erasmus Wilson died, 1884.		4 38	7 33	221	144
10	☾	F		<i>St. Lawrence.</i> George Joachim Goschen b. 1831.		4 39	7 31	222	143
11	☾	S		Half-Q. Day. Dog Days end. Card. Newman d. '90.		4 41	7 29	223	142
12	☾	S		Twelfth S. aft. Trinity. TRIN. LAW SITTINGS END.		4 42	7 27	224	141
13	☾	M		Old Lammas Day. Grouse Shooting begins.		4 44	7 25	225	140
14	☾	Tu		Lord Stratford de Redcliffe died, 1880.		4 45	7 23	226	139
15	☾	W		ASSUMPTION B. V. M. Sir Walter Scott b. 1771.		4 47	7 21	227	138
16	☾	Th		<i>St. Roche's Day.</i> Ben Jonson died, 1637.		4 49	7 19	228	137
17	☾	F		Dissenters' Marriages Gen. Registration Act, 1836.		4 50	7 17	229	136
18	☾	S		Battle of Gravelotte, 1870. Emp. Austria b. 1830.		4 52	7 16	230	135
19	☾	S		Thirteenth Sunday after Trinity.		4 53	7 14	231	134
20	☾	M		Kenny Meadows, artist, died, 1874.		4 55	7 12	232	133
21	☾	Tu		Velpeau, eminent French surgeon, died, 1867.		4 57	7 9	233	132
22	☾	W		Dr. Pusey born, 1800; died, 16 Sept. 1882.		4 58	7 7	234	131
23	☾	Th		Treaty of Prague, 1866. Lord John Hay b. 1827.		5 0	7 5	235	130
24	☾	F		<i>St. Bartholomew.</i> Comte de Paris born, 1838.		5 1	7 3	236	129
25	☾	S		Odo William Russell, Lord Amptill, died, 1884.		5 3	7 1	237	128
26	☾	S		Fourteenth Sunday after Trinity.		5 5	6 59	238	127
27	☾	M		Sir Rowland Hill, postal reformer, died, 1879.		5 6	6 57	239	126
28	☾	Tu		<i>St. Augustine.</i> Slavery abolished, 1833.		5 8	6 54	240	125
29	☾	W		<i>Behead. John Baptist.</i> Eglintoun Tournamt. 1839.		5 9	6 52	241	124
30	☾	Th		Francis Baily, astronomer, died, 1844.		5 11	6 50	242	123
31	☾	F		John Bunyan d. 1688; Pilg. Prog. pub. 1678.		5 12	6 48	243	122

PHASES OF THE MOON.

- New Moon 1d. 0h. 24m. Afternoon.
- ☾ First Quarter 8 10 5 Morning.
- Full Moon 16 1 17 Afternoon.
- ☾ Last Quarter 24 5 40 Morning.
- New Moon 30 8 4 Afternoon.

Apogee 13d. 7h. A. 252,300 | Perigee 29d. 7h. M. 224,200

RAINFALL IN AUGUST, 1893.

In this month rain fell on 11 days. The total fall for the month was 1'26 inches; below the average of ten years, 1871-80, by 1'43 inches.

MONTHLY NOTES.

August 1. Borough and County Lists to be affixed to church doors and at Post Offices for two Sundays.—Claims of Lodgers to be sent in between this day and 20th.

5. Oyster Season commences.

6. Bank Holiday.

20. Last day for service on Overseers of objections to Electors in counties and boroughs.

— Brewster Sessions between now and Sept. 14.

25. Last day for publishing claims and objections to vote in Parliamentary elections, and for Overseers to deliver lists of Electors.

THE SUN.

MEMORANDA.

Day.	After Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Nth.) at Noon.	Hourly Variation (°) of Declination.	Sidereal Time at Noon.
	M. S.	S.	H. M. S.	S.	° ' " "		H. M. S.
1	6 7	0'15	8 46 26	9'71	17 58 25	38'0	8 40 19
2	6 3	0'17	8 50 19	9'68	17 43 6	38'7	8 44 16
3	5 59	0'20	8 54 11	9'66	17 27 28	39'4	8 48 12
4	5 54	0'22	8 58 3	9'63	17 11 34	40'1	8 52 9
5	5 48	0'25	9 1 54	9'61	16 55 23	40'8	8 56 6
6	5 42	0'27	9 5 44	9'58	16 38 55	41'5	9 0 2
7	5 35	0'30	9 9 33	9'55	16 22 12	42'1	9 3 59
8	5 27	0'33	9 13 22	9'53	16 5 13	42'8	9 7 55
9	5 19	0'35	9 17 11	9'50	15 47 58	43'4	9 11 52
10	5 10	0'37	9 20 59	9'48	15 30 28	44'0	9 15 48
11	5 1	0'40	9 24 46	9'46	15 12 44	44'7	9 19 45
12	4 51	0'42	9 28 33	9'43	14 54 45	45'2	9 23 41
13	4 41	0'45	9 32 19	9'41	14 36 32	45'8	9 27 38
14	4 30	0'47	9 36 4	9'39	14 18 4	46'4	9 31 35
15	4 18	0'49	9 39 49	9'36	13 59 24	47'0	9 35 31
16	4 6	0'51	9 43 34	9'34	13 40 30	47'5	9 39 28
17	3 54	0'53	9 47 18	9'32	13 21 23	48'0	9 43 24
18	3 40	0'56	9 51 1	9'30	13 2 3	48'6	9 47 21
19	3 27	0'58	9 54 44	9'28	12 42 31	49'1	9 51 17
20	3 13	0'60	9 58 27	9'26	12 22 46	49'6	9 55 14
21	2 58	0'61	10 2 9	9'24	12 2 50	50'1	9 59 10
22	2 43	0'63	10 5 50	9'22	11 42 42	50'5	10 3 7
23	2 28	0'65	10 9 32	9'20	11 22 23	51'0	10 7 4
24	2 12	0'67	10 13 12	9'19	11 1 53	51'5	10 11 0
25	1 56	0'68	10 16 53	9'17	10 41 13	51'9	10 14 57
26	1 39	0'70	10 20 33	9'16	10 20 22	52'3	10 18 53
27	1 22	0'71	10 24 12	9'14	9 59 21	52'7	10 22 50
28	1 5	0'73	10 27 51	9'13	9 38 10	53'1	10 26 46
29	0 47	0'74	10 31 30	9'11	9 16 50	53'5	10 30 43
30	0 29	0'76	10 35 9	9'10	8 55 21	53'9	10 34 39
31	0 11	0'77	10 38 47	9'08	8 33 44	54'2	10 38 36

METEOROLOGICAL OBSERVATIONS, AUGUST, 1893.

Day.	TEMPERATURE.			BAROM. Mean.	RAIN. FALL. inches.	SUN. SHINE. hours.	WIND.	
	Maximum.	Minimum.	Avg. 50 Yrs.				(Pressure lbs. to foot.)	Direction.
1	69'6	48'6	62	29'789	0'00	2'8	W	1'6
2	72'7	55'3	62	29'705	0'04	5'3	W	2'0
3	68'8	54'6	62	29'672	0'00	1'2	SSW	5'6
4	72'4	55'9	62	29'545	0'57	2'7	SW	8'2
5	70'7	52'8	62	29'737	0'01	6'7	WNW	2'9
6	72'0	48'5	62	29'941	0'01	6'2	SW	1'0
7	79'3	55'3	62	29'905	0'00	7'4	SSW	1'5
8	83'3	54'7	62	29'969	0'00	9'0	SE	2'0
9	83'0	59'5	62	29'853	0'00	11'9	E	2'8
10	83'7	61'0	62	29'792	0'10	6'9	SE	1'2
11	83'3	59'2	62	29'951	0'00	4'7	WSW	1'6
12	81'0	62'1	62	29'984	0'07	1'6	WSW	1'0
13	83'0	59'6	62	30'003	0'00	4'0	E	0'7
14	85'1	57'4	62	30'039	0'00	9'3	ESE	0'7
15	88'5	57'7	62	30'017	0'00	10'3	S	0'5
16	93'0	57'2	61	29'933	0'00	11'3	SW	1'7
17	94'2	60'0	61	29'862	0'00	11'5	SSW	1'0
18	95'1	66'8	61	29'641	0'00	11'3	S	3'7
19	82'7	59'8	61	29'749	0'00	6'3	SSW	2'0
20	80'0	58'3	61	29'647	0'02	7'1	SSW	6'0
21	82'0	58'0	61	29'518	0'01	6'0	SSW	5'7
22	75'0	55'1	61	29'699	0'02	4'5	SW	5'7
23	66'2	55'0	61	29'792	0'29	1'7	W	0'6
24	73'4	52'3	61	29'927	0'00	10'6	WSW	6'8
25	73'6	50'4	60	30'079	0'00	9'5	WNW	1'7
26	66'2	47'5	60	30'049	0'00	3'3	NNW	1'5
27	63'1	47'1	60	29'968	0'00	0'4	NNW	1'5
28	68'2	47'3	60	30'107	0'00	2'0	N	1'5
29	71'3	43'2	60	30'107	0'00	8'5	NNE	1'6
30	76'0	56'8	60	29'927	0'00	3'5	N	1'2
31	72'5	54'7	59	29'779	0'12	0'9	NW	2'1

THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Afternoon.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 3h. A.M.
	H. M.	H. M.	H. M.	H. M. S.	H. M. S.	" "	" "	D. H.	
1	3 40	8 17	0 10	8 50	7 21	59 27	61 15	16 43	29 6
2	5 16	8 37	1 8	9 49	55	16 29	39	16 38	1 0
3	6 50	8 51	2 1	10 45	14	10 6	38	16 28	2 0
4	8 18	9 4	2 50	11 37	0	3 20	58	16 14	3 0
5	9 42	9 16	3 37	12 26	29	3 22	78	15 59	4 0
6	11 3	9 28	4 23	13 14	55	9 43	1	15 43	5 0
7	aft.	9 42	5 14	14 5	26	24	56	15 29	6 0
8	1 45	9 58	5 56	14 52	58	20	19	15 7	7 0
9	3 20	10 23	6 46	15 53	24	12	42	15 4	8 0
10	4 13	10 54	7 36	16 36	33	26	55	14 56	9 0
11	5 17	11 38	8 28	17 30	18	28	22	14 50	10 0
12	6 7	mn.	9 20	18 24	19	28	35	14 46	11 0
13	6 44	0 36	10 10	19 17	35	27	15	14 45	12 0
14	7 10	1 42	10 59	20 9	10	24	49	14 43	13 0
15	7 28	2 56	11 44	20 58	33	21	18	14 59	14 0
16	7 43	4 10	mn.	21 45	41	16	55	14 50	15 0
17	7 55	5 25	0 28	22 30	55	11	49	14 55	16 0
18	8 5	6 38	1 10	23 14	54	6	14	14 24	17 0
19	8 13	7 50	1 50	23 58	30	0 21	15	15 8	18 0
20	8 26	9 4	2 31	0 42	41	5 37	59	15 16	19 0
21	8 38	10 20	3 14	1 28	33	11 30	20	15 25	20 0
22	8 53	11 40	3 59	2 17	14	17 0	45	15 35	21 0
23	9 13	aft.	4 48	3 9	48	21 51	4	15 46	22 0
24	9 44	2 29	5 41	4 6	58	25 39	33	15 58	23 0
25	10 32	3 49	6 41	5 8	39	28 2	20	16 9	24 0
26	11 39	4 56	7 44	6 13	36	28 38	11	16 20	25 0
27	mn.	5 44	8 48	7 19	27	17 27	60	16 29	26 0
28	1 6	6 17	9 52	8 23	39	23 57	39	16 34	27 0
29	2 40	6 39	10 51	9 24	25	19 3	0	16 35	28 0
30	4 14	6 56	11 46	10 21	16	12 58	58	16 32	29 0
31	5 45	7 9	aft.	11 14	41	6 15	32	16 24	0 16

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
4	7 43 17	6 52 44	1 33 53	5 48 4	13 17 26
9	7 58 57	7 18 35	1 42 19	5 52 13	13 18 44
14	8 25 16	7 44 22	1 50 2	5 56 13	13 20 9
19	8 59 32	8 9 56	1 56 59	6 0 2	13 21 41
24	9 37 48	8 35 15	2 3 2	6 3 41	13 23 19
29	10 16 20	9 0 14	2 8 4	6 7 8	13 25 3

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
4	18 40	14 22	21 25	6 0 18	23 1 39
9	19 21	3 21	55 32	6 45 12	23 2 54
14	19 14	52 21	13 58	7 25 45	23 3 42
19	18 4	32 20	17 9	8 1 46	23 4 7
24	15 47	29 19	5 44	8 32 57	23 4 11
29	12 38	7 17	40 37	8 59 0	23 3 58

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

D.	☉	♂	♀	♂	♂	♂
	" "	" "	" "	" "	" "	" "
5	8 7	11 0	6 4	13 1	1 5	0 9
15	8 7	8 4	6 1	14 2	1 6	0 9
25	8 8	6 9	5 9	15 4	1 6	0 9

SEMI-DIAMETER OF SUN AND PLANETS.

☉	♂	♀	♂	♂	♂
" "	" "	" "	" "	" "	" "
15 48	2 2	6 0	8 2	16 1	7 5
15 50	3 2	5 7	8 9	16 4	7 3
15 52	2 6	5 6	9 7	16 8	7 2

Mean Longitude of Moon's ascending Node, August 1, 3° 56' 7".

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

August 1. Day breaks at 1h. 31m. morn., and Twilight ends at 10h. 41m. aft., the length of the Day being 15h. 22m.

Aug. 5. Mean time of Sun's semidiameter passing the meridian, 1m. 61s.

Aug. 6. Occultation of Spica Virginis; magnitude 1. The disappearance takes place at 0h. 59m. aft., 82° from the vertex; the reappearance at 1h. 19m. aft., 46° from the vertex.

Aug. 6. Occultation of B. A. C. 4531; magnitude 6. The disappearance takes place at 7h. 41m. aft., 124° from the vertex.

Aug. 9. Occultation of B. A. C. 5347; magnitude 5. The disappearance takes place at 8h. 6m. aft., 54° from the vertex; the reappearance at 9h. 10m. aft., 300° from the vertex.

Aug. 20. Mean time of Sun's semidiameter passing the meridian, 1m. 49s.

Aug. 24. A near approach of 23 Tauri to the Moon; magnitude 5. The least distance of star from Moon's limb occurs at 0h. 5m. morn., 20° from the vertex.

Aug. 24. Occultation of 27 Tauri; magnitude 4. The disappearance takes place at 1h. 2m. morn., 53° from the vertex; the reappearance at 1h. 35m. morn., 345° from the vertex. A near approach of 28 Tauri; magnitude 5½. Least distance of star from Moon's limb at 1h. 22m. morn., 19° from the vertex.

Aug. 26. Near approach of 136 Tauri to the Moon; magnitude 5. Least distance of star from Moon's limb at 1h. 4m. morn., 212° from the vertex.

In this month the Mornings decrease 47m., the Afternoons 59m.

MORNING AND EVENING STARS.

♂ MERCURY is a morning star, in Cancer tilt towards the end of the month, when it enters Leo, passing very near to Regulus about the 27th.

♀ VENUS is a morning star; may be observed in the North-east, in the early days of the month, near the star δ Geminorum.

♂ MARS rises late in the evening and may be seen on the 19th a few degrees North of a Piscium.

♂ SATURN is an evening star, nearly stationary in Virgo.

Day of		Time of High Water at the undermentioned Places—																1894.
Month.	Week.	LONDON BRIDGE		LIVERPOOL		BRISTOL		HULL		GREENOCK.		LEITH.		DUBLIN (Bar).				
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.			
1	W	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.			
2	Th	1 13	1 43	11 3	11 29	6 46	7 13	5 52	6 20	11 56	...	1 58	2 24	10 45	11 9			
3	F	2 10	2 34	11 53	...	7 40	8 3	6 47	7 11	0 24	0 49	2 50	3 12	11 32	11 56			
4	S	2 58	3 22	0 19	0 43	8 27	8 51	7 36	8 1	1 14	1 40	3 35	4 0	...	0 22			
5	S	3 45	4 8	1 6	1 27	9 13	9 33	8 23	8 44	2 3	2 23	4 23	4 44	0 46	1 7			
6	M	4 29	4 51	1 49	2 9	9 54	10 14	9 6	9 27	2 45	3 5	5 7	5 28	1 30	1 52			
7	Tu	5 12	5 32	2 30	2 49	10 34	10 53	9 49	10 8	3 26	3 45	5 51	6 12	2 15	2 35			
8	W	5 51	6 11	3 7	3 26	11 9	11 26	10 27	10 47	4 3	4 22	6 33	6 54	2 55	3 15			
9	Th	6 31	6 51	3 45	4 7	11 43	...	11 10	11 37	4 41	5 2	7 16	7 40	3 36	4 0			
10	F	7 15	7 40	4 33	5 3	0 4	0 29	...	0 6	5 25	5 52	8 9	8 40	4 23	4 59			
11	S	8 7	8 39	5 38	6 19	0 59	1 34	0 38	1 9	6 24	7 1	9 15	9 54	5 30	6 6			
12	S	9 18	10 1	7 4	7 46	2 15	3 0	1 45	2 23	7 42	8 24	10 34	11 13	6 44	7 23			
13	M	10 46	11 25	8 26	9 1	3 44	4 26	3 1	3 40	9 5	9 42	11 51	...	8 1	8 37			
14	Tu	...	0 3	9 32	9 56	5 2	5 35	4 16	4 48	10 15	10 41	0 25	0 55	9 10	9 38			
15	W	0 35	1 0	10 18	10 37	6 1	6 24	5 12	5 34	11 5	11 27	1 17	1 39	10 2	10 22			
16	Th	1 23	1 44	10 55	11 13	6 46	7 6	5 53	6 12	11 47	...	2 0	2 18	10 39	10 51			
17	F	2 3	2 19	11 29	11 45	7 23	7 40	6 30	6 47	0 6	0 24	2 34	2 50	11 10	11 25			
18	S	2 35	2 51	...	0 2	7 56	8 11	7 3	7 20	0 41	0 57	3 5	3 20	11 40	11 55			
19	S	3 6	3 20	0 18	0 34	8 26	8 42	7 36	7 51	1 14	1 30	3 35	3 50	...	0 12			
20	M	3 36	3 52	0 50	1 5	8 57	9 12	8 7	8 22	1 47	2 2	4 6	4 22	0 29	0 45			
21	Tu	4 7	4 23	1 21	1 37	9 27	9 42	8 38	8 54	2 17	2 33	4 38	4 55	1 1	1 18			
22	W	4 39	4 53	1 52	2 7	9 56	10 12	9 9	9 25	2 48	3 3	5 11	5 27	1 34	1 50			
23	Th	5 9	5 25	2 23	2 41	10 27	10 44	9 42	10 0	3 19	3 37	5 44	6 4	2 8	2 27			
24	F	5 43	6 3	2 59	3 19	11 0	11 19	10 19	10 41	3 55	4 15	6 25	6 48	2 47	3 9			
25	S	6 24	6 48	3 42	4 8	11 40	...	11 8	11 39	4 38	5 3	7 13	7 42	3 33	4 2			
26	S	7 14	7 45	4 40	5 17	0 5	0 36	...	0 14	5 30	6 5	8 16	8 54	4 34	5 12			
27	M	8 21	9 4	6 4	6 57	1 13	2 0	0 51	1 32	6 47	7 35	9 40	10 28	5 52	6 38			
28	Tu	9 55	10 44	7 45	8 29	2 53	3 43	2 17	3 0	8 23	9 9	11 12	11 53	7 22	8 5			
29	W	11 30	...	9 7	9 36	4 30	5 9	3 44	4 23	9 49	10 21	...	0 30	8 44	9 18			
30	Th	0 10	0 41	10 3	10 27	5 41	6 10	4 52	5 19	10 51	11 18	0 57	1 24	9 47	10 12			
31	F	1 8	1 35	10 52	11 14	6 37	7 2	5 44	6 9	11 45	...	1 50	2 13	10 34	10 55			
		1 59	2 20	11 36	...	7 25	7 47	6 32	6 54	0 9	0 32	2 35	2 56	11 16	11 38			

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.
6	3 1M	10 48M	6 35A	1 55M	10 3M	6 11A	10 0A	4 38M	11 14M	0 36M	8 50M	5 4A	10 42M	4 17A	9 52A
13	3 2M	10 51M	6 40A	2 8M	10 11M	6 14A	9 38A	4 22M	11 3M	0 14M	8 28M	4 42A	10 18M	3 52A	9 26A
20	3 33M	11 12M	6 51A	2 27M	10 20M	6 13A	9 16A	4 4M	10 49M	11 49A	8 3M	4 20A	9 53M	3 26A	8 59A
27	4 21M	11 38M	6 55A	2 45M	10 27M	6 9A	8 52A	3 44M	10 33M	11 26A	7 40M	3 58A	9 30M	3 1A	8 32A

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.			DECL. N.		
1	h. m.	s.		°	'	"
10	1 20	10 9		88	44	29
19	1 20	19 1		88	44	31
28	1 20	26 2		88	44	33
	1 20	33 5		88	44	36

ANGULAR DISTANCE OF THE MOON FROM FOMALHAUT.

D.	Position of Star.	6 P.M.		9 P.M.		Midnight.	
		°	'	°	'	°	'
11	East	65	44	64	21	62	58
12	East	54	43	53	21	52	0
13	East	43	59	42	40	41	22
14	East	33	48	32	35	31	24

At the beginning of August Cepheus, Cygnus, Vulpecula, Delphinus, and Capricornus south at midnight.

In Vulpecula is the famous "Dumb-bell" Nebula, generally considered irresolvable, although under the higher powers of Lord Rosse's telescope there seemed to be some trace of resolvability shown. It is situated in R.A. 19^h. 54^m. 58^s., and Decl. 22° 26' N. This Nebula gives a spectrum of bright lines according to Dr. Huggins.

There is a small bright globular cluster below the Dolphin's tail, consisting of a mass of very small stars, not very easy for small telescopes: it is situated in R.A. 20^h. 28^m. 59^s., and Decl. 7° 3' N. This cluster is a good one, according to Sir John Herschel, for testing the space-penetrating power of telescopes. This though a small is yet a bright cluster, and may be observed easily on the evenings of the first and last weeks in the month.

DAY OF			Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.	SUN ENTERS LIBRA 23 ^d . 1 ^h . M. AUTUMN COMMENCES.		Rises.	Sets.	of the Year.	to end of Year.
1	Light and Dark.	S	<i>St. Giles.</i> William Yarrel, naturalist, d. 1856.		5 14	6 46	244	121
2	Light and Dark.	S	Fifteenth Sunday after Trinity. Sedancapit. 1870.		5 16	6 43	245	120
3	Light and Dark.	M	Oliver Cromwell d. 1658. Ld. Halsbury b. 1825.		5 17	6 41	246	119
4	Light and Dark.	Tu	Sir Wilfrid Lawson b. 1829. Ld. Ashbourne b. 1837.		5 19	6 39	247	118
5	Light and Dark.	W	Samuel Morley died, 1886.		5 20	6 37	248	117
6	Light and Dark.	Th	Edward Stanley, Bishop of Norwich, died, 1849.		5 22	6 34	249	116
7	Light and Dark.	F	<i>St. Enurhus.</i> [1830.		5 24	6 32	250	115
8	Light and Dark.	S	<i>Nativity B. V. M.</i> Coronation William & Adelaide,		5 25	6 30	251	114
9	Light and Dark.	S	Sixteenth Sunday after Trinity.		5 27	6 28	252	113
10	Light and Dark.	M	Labour Day, U.S.A.		5 28	6 25	253	112
11	Light and Dark.	Tu	Rt. Hon. Spencer Horatio Walpole b. 1806.		5 30	6 23	254	111
12	Light and Dark.	W	Doncaster Races; St. Leger Day.		5 32	6 21	255	110
13	Light and Dark.	Th	Battle of Tel-el-Kebir, '82. Earl Stanhope b. '38.		5 33	6 18	256	109
14	Light and Dark.	F	Doncaster; Cup Day. Duke of Wellington d. 1852.		5 35	6 16	257	108
15	Light and Dark.	S	Liverpool & Manchester Railway opened, 1830.		5 36	6 14	258	107
16	Light and Dark.	S	Seventeenth Sunday after Trinity.		5 38	6 12	259	106
17	Light and Dark.	M	<i>St. Lambert.</i> Walter Savage Landor died, 1864.		5 40	6 9	260	105
18	Light and Dark.	Tu	Henry Philipotts, Bp. of Exeter, died, 1869.		5 41	6 7	261	104
19	Light and Dark.	W	Dr. Jelf, principal King's Coll. died 1871. Emb. Day.		5 43	6 5	262	103
20	Light and Dark.	Th	Battle of the Alma, 1854.		5 44	6 2	263	102
21	Light and Dark.	F	<i>St. Matthew, Ap., Eban. & Mart.</i> Ember Day.		5 46	6 0	264	101
22	Light and Dark.	S	Dr. Henry Stebbing died, 1883. Ember Day.		5 48	5 58	265	100
23	Light and Dark.	S	Eighteenth Sunday after Trinity.		5 49	5 55	266	99
24	Light and Dark.	M	Edward Stanhope, M.P., born, 1840.		5 51	5 53	267	98
25	Light and Dark.	Tu	Professor Sayce born, 1846. [1810.		5 53	5 51	268	97
26	Light and Dark.	W	<i>St. Cyprian.</i> Adm. Ld. Collingwood b. 1748; d. 7 Mar.		5 54	5 48	269	96
27	Light and Dark.	Th	St. Vincent de Paul, philanthropist, died, 1660.		5 56	5 46	270	95
28	Light and Dark.	F	Sir Rd. Owen, naturalist, b. 1804; d. Dec. 18, 1892.		5 57	5 44	271	94
29	Light and Dark.	S	<i>St. Michael and all Angels.</i> Quarter Day.		5 59	5 42	272	93
30	Light and Dark.	S	Nineteenth Sunday after Trinity.		6 1	5 39	273	92

PHASES OF THE MOON.

☾ First Quarter	7d.	1 ^h .	3m.	Morning.
☉ Full Moon	15	4	21	Morning.
☾ Last Quarter	22	0	32	Afternoon.
☉ New Moon	29	5	44	Morning.

Apogee 10d. 8h. m. 251.700 | Perigee 26d. 6h. m. 227.200

* The Harvest Moon.

RAINFALL IN SEPTEMBER, 1893.

In this month rain fell on 14 days. The total fall for the month was 1.29 inch; below the average of ten years, 1871-80, by 1.14 inch.

MONTHLY NOTES.

September 1. Overseers to make out Burgess Lists to be delivered to the Town Clerk, and lists of claims and objections for Counties to the Clerk of the Peace.—The lists of objections to County Electors, and claims and objections in Boroughs, to be affixed to church doors till 15th. Lists of Jurors to be affixed to church doors for the first three Sundays. Salmon close-time begins.

8. Last day for inspecting claims of voters.

12. Sheriffs of City of London to be sworn in.

17. Edinburgh Autumn Holiday.

29. Various parochial, union, and other local accounts made up to end of week nearest this day.

THE SUN.

MEMORANDA.

- 1.
2. S.
- 3.
- 4.
- 5.
- 6.
- 7.
- 8.
9. S.
- 10.
- 11.
- 12.
- 13.
- 14.
- 15.
16. S.
- 17.
- 18.
- 19.
- 20.
- 21.
- 22.
23. S.
- 24.
- 25.
- 26.
- 27.
- 28.
- 29.
30. S.

Day	Before Clock.		Hourly Variation of Equation of Time.	Right Ascension at Noon.			Hourly Variation of R. A.	Apparent Declination (Nth.) at Noon.			Hourly Variation of Declination.	Sidereal Time at Noon.		
	M. S.	S.		H. M. S.	S.			° ' "				H. M. S.		
1	0	8	0.78	10 42 25	9.07			8 11 58			54.6	10 42 33		
2	0	27	0.79	10 46 3	9.06			7 50 4			54.9	10 46 29		
3	0	46	0.81	10 49 40	9.05			7 28 3			55.2	10 50 26		
4	1	5	0.82	10 53 17	9.04			7 5 55			55.5	10 54 22		
5	1	25	0.83	10 56 54	9.03			6 43 40			55.7	10 58 19		
6	1	45	0.84	11 0 30	9.02			6 21 13			56.0	11 2 15		
7	2	5	0.85	11 4 7	9.01			5 58 50			56.3	11 6 12		
8	2	26	0.85	11 7 43	9.00			5 36 17			56.5	11 10 8		
9	2	46	0.86	11 11 19	8.99			5 13 37			56.7	11 14 5		
10	3	7	0.87	11 14 54	8.99			4 50 53			56.9	11 18 2		
11	3	28	0.87	11 18 30	8.98			4 28 4			57.1	11 21 58		
12	3	49	0.88	11 22 6	8.98			4 5 10			57.3	11 25 55		
13	4	10	0.88	11 25 41	8.97			3 42 12			57.5	11 29 51		
14	4	31	0.88	11 29 16	8.97			3 19 9			57.6	11 33 48		
15	4	53	0.89	11 32 52	8.97			2 56 4			57.8	11 37 44		
16	5	14	0.89	11 36 27	8.97			2 32 55			57.9	11 41 41		
17	5	35	0.89	11 40 2	8.97			2 9 43			58.0	11 45 37		
18	5	57	0.89	11 43 37	8.97			1 46 28			58.1	11 49 34		
19	6	18	0.88	11 47 13	8.97			1 23 10			58.2	11 53 31		
20	6	39	0.88	11 50 48	8.97			0 59 51			58.3	11 57 27		
21	7	0	0.88	11 54 24	8.98			0 36 30			58.4	12 1 24		
22	7	21	0.87	11 57 59	8.98			0 13 7			58.5	12 5 20		
23	7	42	0.87	12 1 35	8.99			South			58.5	12 9 17		
24	8	3	0.86	12 5 11	8.99			0 33 41			58.5	12 13 13		
25	8	23	0.85	12 8 47	9.00			0 57 6			58.5	12 17 10		
26	8	44	0.84	12 12 23	9.01			1 20 31			58.5	12 21 6		
27	9	4	0.83	12 15 59	9.02			1 43 56			58.5	12 25 3		
28	9	24	0.83	12 19 36	9.03			2 7 20			58.5	12 29 0		
29	9	43	0.82	12 23 13	9.04			2 30 43			58.4	12 32 56		
30	10	3	0.80	12 26 50	9.05			2 54 5			58.3	12 36 53		

METEOROLOGICAL OBSERVATIONS, SEPTEMBER, 1893.

Day	TEMPERATURE.			MAROM. Mean.	RAIN. FALL.	SUN. SHINE.	WIND.	
	Maximum.	Minimum.	Avg. 50 Yrs.				(Pressure lbs. to foot).	
1	66.0	54.5	59	inches. 29.875	inches. 0.13	hours. 0.1	Directn. NNE	Pressure. 0.5
2	71.3	54.0	59	29.957	0.00	1.8	WNW	1.4
3	68.9	52.0	58	30.102	0.00		NNE	1.2
4	71.1	48.3	58	30.019	0.00	5.7	ESE	1.0
5	79.0	45.7	58	29.784	0.00	7.1	SE	0.2
6	82.8	52.3	58	29.620	0.01	8.4	SW	1.3
7	77.2	54.7	58	29.633	0.01	6.7	SW	4.0
8	73.9	52.9	58	29.535	0.20	5.0	SW	12.8
9	64.1	50.2	58	29.735	0.05	4.3	NW	6.7
10	65.2	44.4	58	29.855	0.00	7.6	NE	1.8
11	66.4	45.3	58	30.052	0.00	9.5	ENE	3.8
12	68.4	46.0	58	30.166	0.00	7.9	ENE	3.2
13	70.0	39.4	57	29.997	0.00	4.0	WSW	1.5
14	77.9	55.0	57	30.080	0.00	5.0	WSW	0.4
15	79.5	48.6	57	29.949	0.00	8.9	SW	0.5
16	65.9	47.2	57	29.663	0.24	...	NNE	1.0
17	64.2	51.2	57	29.581	0.01	3.7	NW	1.7
18	67.3	51.6	57	29.490	0.00	0.1	SW	1.7
19	67.9	57.0	56	29.325	0.02	0.2	SW	4.5
20	66.7	48.0	56	29.273	0.04	4.0	WSW	1.0
21	55.4	41.0	56	29.326	0.00	...	NE	0.6
22	63.4	39.5	55	29.509	0.00	8.2	WSW	3.7
23	52.9	41.3	55	29.466	0.05	2.0	W	4.2
24	60.3	37.5	55	29.843	0.00	5.5	W	1.5
25	69.8	41.4	55	29.824	0.00	1.3	W	2.6
26	65.8	45.2	55	29.760	0.00	1.3	SW	1.8
27	68.1	51.5	54	29.623	0.24	1.2	SW	1.5
28	63.1	48.4	54	29.552	0.07	0.5	SSW	4.0
29	66.0	52.2	54	29.204	0.18	6.3	SSW	5.5
30	64.0	48.2	54	29.183	0.04	4.9	SW	3.2

THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Afternoon.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semidiameter at Noon.	Age at Noon.	Configurations of Jupiter's Satellites at 2h. a.m.
	H. M. S.	H. M. S.	H. M. S.	H. M. S.	° ' " N	° ' " S	° ' " "	D. H. M.	
1	7 13	7 21	1 26	12 5 42	0 39 14	59 25	16 13	1 16	42031
2	8 37	7 33	2 13	12 55 28	7 21 19	58 35	15 59	2 16	42103
3	10 0	7 46	3 0	13 45 5	13 31 2	57 41	15 45	3 16	44023
4	11 24	8 1	3 48	14 35 27	18 52 31	56 47	15 30	4 16	40123
5	aft.	8 23	4 38	15 26 6	23 12 54	55 59	15 17	5 16	24310
6	0	8 52	5 29	16 20 12	26 22 6	55 17	15 5	6 16	30421
7	3 10	9 31	6 22	17 14 23	28 12 57	54 45	14 57	7 16	31024
8	4 5	10 25	7 14	18 8 52	28 42 4	54 23	14 51	8 16	23014
9	4 45	11 30	8 5	19 2 37	27 50 25	54 10	14 47	9 16	21034
10	5 15	mn.	8 54	19 54 47	25 43 6	54 7	14 45	10 16	01234
11	5 36	0 41	9 41	20 44 47	22 28 32	54 13	14 48	11 16	0234
12	5 51	1 56	10 25	21 32 34	18 16 59	54 26	14 51	12 16	23104
13	6 3	3 11	11 7	22 18 26	13 19 37	54 44	14 56	13 16	3014
14	6 14	4 25	11 49	23 2 59	7 47 55	55 7	15 3	14 16	31042
15	6 24	5 39	mn.	23 47 1	1 53 43	55 33	15 10	15 16	4201
16	6 35	6 53	0 30	0 31 28	4 10 26	56 2	15 18	16 16	42103
17	6 45	8 9	1 13	1 17 20	10 10 43	56 31	15 26	17 16	40123
18	6 58	9 29	1 57	2 54 15	15 51 20	57 0	15 34	18 16	4023
19	7 17	10 52	2 45	2 57 26	20 53 59	57 30	15 42	19 16	24230
20	7 45	aft.	3 37	3 53 17	24 57 49	58 0	15 50	20 16	4301
21	8 27	1 37	4 34	4 53 12	27 40 56	58 29	15 58	21 16	43102
22	9 25	2 48	5 35	5 56 11	28 44 0	58 57	16 5	22 16	43201
23	10	3 40	6 37	7 0 15	27 55 35	59 22	16 12	23 16	21043
24	mn.	4 17	7 39	8 3 11	25 16 24	59 42	16 18	24 16	01243
25	0 11	4 43	8 38	9 3 16	20 59 30	59 54	16 21	25 16	10234
26	1 44	5 1	9 34	9 59 54	15 26 30	59 57	16 22	26 16	21204
27	3 14	5 15	10 25	10 53 23	9 2 47	59 48	16 19	27 16	32014
28	4 42	5 27	11 14	11 44 34	2 14 9	59 27	16 14	28 16	31024
29	6 8	5 39	12 34	12 34 33	4 35 12	58 55	16 5	0 6	23014
30	7 32	5 51	0 49	13 24 25	11 3 22	58 14	15 54	1 6	21034

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	H. M. S.	H. M. S.	H. M. S.	H. M. S.	H. M. S.
3	10 53 1	9 24 53	2 11 58	6 10 22	13 26 52
8	11 27 15	9 49 10	2 14 36	6 13 22	13 28 46
13	11 59 13	10 13 5	2 15 54	6 16 8	13 30 45
18	12 29 19	10 36 42	2 15 48	6 18 38	13 32 48
23	12 58 0	11 0 2	2 14 15	6 20 51	13 34 54
28	13 25 36	11 23 9	2 11 15	6 22 47	13 37 3

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	° ' " N	° ' " S	° ' " S	° ' " S	° ' " S
3	8 57 27n	16 2 54n	9 19 43n	23 3 31n	6 37 57s
8	5 3 12	14 13 50	9 35 2	23 2 54	6 49 59
13	5 3 7n	14 42 9	9 44 56	23 2 10	7 2 19
18	2 43 32s	10 6 55	9 49 23	23 1 21	7 14 55
23	6 24 7	7 51 51	9 48 23	23 0 32	7 27 44
28	9 51 17s	5 31 on	9 42 6n	22 59 46n	7 40 42s

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

	☉	♂	♀	♂	♂	♂	♂	♂
D.	"	"	"	"	"	"	"	"
5	8 8	6 4	5 7	16 9	1 7	0 8	15 54	2 4
15	8 8	6 4	5 6	18 2	1 7	0 8	15 57	2 4
25	8 8	6 7	5 5	19 4	1 8	0 8	16 0	2 5

SEMI-DIAMETER OF SUN AND PLANETS.

	☉	♂	♀	♂	♂	♂	♂	♂
D.	"	"	"	"	"	"	"	"
5	15 54	2 4	5 4	10 6	17 3	7 1	15 57	2 4
15	15 57	2 4	5 2	11 4	17 7	7 0	16 0	2 5
25	16 0	2 5	5 1	12 2	18 2	7 0		

Mean Longitude of Moon's ascending Node, September 1, 2° 17' T.

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

September 1. Day breaks at 3h. 7m. morn., and Twilight ends at 8h. 53m. aft., the length of the Day being 13h. 32m.

Sept. 4. A near approach of B.A.C. 4923 to the Moon; magnitude 6. Least distance of star from Moon's limb at 8h. 21m. aft., 342° from the vertex.

Sept. 5. Mean time of Sun's semidiameter passing the meridian, 1m. 4' 0s.

Sept. 12. Occultation of ϕ Capricorn; magnitude 5½. The disappearance takes place at 0h. 43m. morn., 45° from the vertex.

Sept. 15. Partial eclipse of the Moon, partly visible at Greenwich, see p. 70.

Sept. 17. Occultation of ϵ Piscium; magnitude 4. The disappearance takes place at 2h. 6m. morn., 342° from the vertex; the reappearance at 2h. 43m. morn., 274° from the vertex.

Sept. 20. Occultation of γ Tauri; magnitude 6. The reappearance takes place at 2h. 37m. morn., 243° from the vertex. Occultation of χ^1 Tauri; magnitude 5½. The reappearance takes place at 8h. 49m. aft., 312° from the vertex.

Sept. 20. Mean time of Sun's semidiameter passing the meridian, 1m. 3' 9s.

Sept. 23. Sun enters Libra: Autumn commences, 1h. morn.

Sept. 24. Occultation of ϵ Geminorum; magnitude 6. The reappearance takes place at 1h. 34m. morn., 329° from the vertex.

Sept. 29. Total eclipse of the Sun, invisible at Greenwich, see p. 70.

In this month the Mornings decrease 47m., the Afternoons, 1h. 7m.

MORNING AND EVENING STARS.

♂ MERCURY is an evening star; but, except quite at the end of the month, too near the Sun to be observed.

♀ VENUS is a morning star throughout the month; near to Regulus between the 8th and 13th.

♂ MARS may be well observed in this month, in the later evening, a little North of the star ϵ^2 Ceti.

♂ JUPITER rises late in the night, and is not conveniently situated for observation.

♂ SATURN is an evening star: not far from Spica Virginis.

Day of

Time of High Water at the undermentioned Places—

Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar)	
		Morn.		Morn.		Morn.		Morn.		Morn.		Morn.		Morn.	
		H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.
1	S	2 ⁴¹	3 ³	...	0 21	8 8	8 29	7 17	7 38	0 55	1 17	3 17	3 37	11 59	...
2	S	3 ²³	3 ⁴²	0 40	1 0	8 47	9 7	7 57	8 17	1 37	1 57	3 56	4 17	0 19	0 40
3	M	4 ¹	4 ²⁰	1 19	1 38	9 25	9 43	8 36	8 55	2 15	2 34	4 36	4 56	0 59	1 19
4	Tu	4 ⁴⁰	4 ⁵⁸	1 55	2 12	10 0	10 16	9 13	9 31	2 52	3 9	5 15	5 32	1 38	1 56
5	W	5 14	5 31	2 29	2 46	10 33	10 49	9 48	10 6	3 25	3 42	5 51	6 11	2 14	2 34
6	Th	5 50	6 10	3 5	3 25	11 5	11 24	10 26	10 50	4 1	4 21	6 33	6 56	2 54	3 16
7	F	6 31	6 54	3 48	4 17	11 45	...	11 18	11 50	4 43	5 9	7 21	7 53	3 41	4 12
8	S	7 22	7 54	4 51	5 34	0 13	0 47	...	0 25	5 39	6 20	8 28	9 11	4 46	5 26
9	S	8 35	9 25	6 27	7 17	1 30	2 22	1 5	1 50	7 6	7 54	10 0	10 45	6 11	6 55
10	M	10 15	10 58	8 0	8 39	3 13	3 59	2 34	3 15	8 39	9 19	11 27	...	7 37	8 15
11	Tu	11 40	...	9 10	9 34	4 40	5 12	3 54	4 26	9 52	10 18	0 3	0 34	8 47	9 13
12	W	0 13	0 38	9 54	10 14	5 38	6 0	4 50	5 10	10 40	11 2	0 56	1 15	9 37	9 58
13	Th	0 59	1 18	10 30	10 46	6 21	6 40	5 30	5 47	11 21	11 38	1 35	1 53	10 15	10 30
14	F	1 37	1 54	11 1	11 16	6 57	7 12	6 3	6 18	11 54	...	2 9	2 23	10 43	10 57
15	S	2 8	2 23	11 31	11 46	7 27	7 42	6 34	6 49	0 11	0 27	2 37	2 51	11 11	11 25
16	S	2 36	2 50	...	0 3	7 56	8 11	7 4	7 20	0 42	0 58	3 5	3 20	11 40	11 55
17	M	3 5	3 19	0 18	0 34	8 25	8 41	7 35	7 51	1 13	1 30	3 34	3 50	...	0 12
18	Tu	3 35	3 52	0 51	1 6	8 57	9 13	8 7	8 23	2 17	2 3	4 7	4 23	0 30	0 45
19	W	4 8	4 24	1 21	1 37	9 27	9 42	8 38	8 54	2 47	2 33	4 39	4 56	1 2	1 19
20	Th	4 39	4 57	1 54	2 12	9 59	10 16	9 13	9 31	2 50	3 8	5 14	5 33	1 38	1 57
21	F	5 14	5 34	2 32	2 55	10 35	10 55	9 51	10 15	3 28	3 41	5 55	6 22	2 18	2 43
22	S	5 59	6 25	3 18	3 46	11 17	11 43	10 42	11 16	4 14	4 51	6 48	7 19	3 9	3 39
23	S	6 52	7 27	4 22	5 8	...	0 18	11 56	...	5 12	5 56	7 58	8 45	4 17	5 3
24	M	8 11	9 2	6 3	6 58	1 4	1 59	0 42	1 30	6 45	7 36	9 38	10 27	5 50	6 37
25	Tu	9 56	10 46	7 45	8 26	2 54	3 44	2 16	3 0	8 24	9 6	11 12	11 50	7 22	8 8
26	W	11 27	...	8 59	9 26	4 27	5 1	3 41	4 15	9 41	10 11	...	0 22	8 36	9 2
27	Th	0 3	0 30	9 50	10 10	5 31	5 56	4 42	5 6	10 37	11 0	0 47	1 11	9 34	9 55
28	F	0 55	1 17	10 30	10 51	6 19	6 40	5 26	5 47	11 22	11 45	1 33	1 52	10 13	10 33
29	S	1 38	1 ⁵⁸	11 11	11 30	7 2	7 22	6 9	6 29	...	0 6	2 13	2 32	10 51	11 10
30	S	2 ¹⁶	2 ³⁵	11 51	...	7 41	7 59	6 48	7 8	0 26	0 46	2 50	3 8	11 29	11 48

RISE, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets	Rises	Souths	Sets
3	5 13M	0 3A	6 53A	3 5M	10 34M	6 3A	8 27A	3 23M	10 15M	11 3A	7 21M	3 35A	9 6M	2 36A	8 6A
10	6 1M	0 22A	6 43A	3 27M	10 41M	5 55A	8 2A	2 59M	9 52M	10 40A	6 57M	3 11A	8 43M	2 11A	7 39A
17	6 45M	0 38A	6 31A	3 48M	10 46M	5 44A	7 34A	2 32M	9 26M	10 16A	6 33M	2 47A	8 19M	1 46A	7 13A
24	7 23M	0 50A	6 17A	4 10M	10 51M	5 32A	7 4A	2 2M	8 56M	9 51A	6 9M	2 23A	7 57M	1 22A	6 47A

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.			DECL. N.
	H.	M.	S.	
1	1	20	35 ⁹	88 44 37
10	1	20	42 ⁰	88 44 40
19	1	20	46 ⁵	88 44 43
28	1	20	49 ⁸	88 44 47

ANGULAR DISTANCE OF THE MOON FROM ANTARES.

D.	Position of Star.		6 P.M.		9 P.M.		Midnight.	
	West	East	°	'	°	'	°	'
10	West	East	50	13 43	51	42 34	53	11 28
11	West	East	62	6 22	63	35 50	65	5 24
12	West	East	74	5 18	75	35 45	77	6 21
13	West	East	86	13 5	87	44 47	89	16 39

On the 1st of September, Cepheus, Pegasus, Aquarius, and Pisces Australis will be on the meridian at midnight.

In Pegasus, R.A. 21h. 24m. 49s., and Decl. 11° 41' N., is a fine globular cluster of very small stars, between the mouths of Pegasus and Equuleus, much condensed towards the centre where the stars cannot be resolved: there are many telescopic and several rather bright stars in the field. Aquarius contains a fine cluster of stars, condensed in the centre, and presenting a true globular form,

consisting of very small stars very much compressed. It is situated in R.A. 21h. 27m. 56s., and Decl. 1° 18' S.

In the early evening, at the beginning of the month, the bright cluster in Capricornus, situated in R.A. 21h. 34m. 21s., and Decl. 23° 38' S., can be observed: it is rather bright, with a central condensation, and does not require great telescopic power to see it well. The best evenings for observation are those about the beginning and end of the month.

DAY OF			Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.	SUN ENTERS SCORPIO 23d. 10h. M.		Rises.		of the Year.	to end of Year.
					H. M.	H. M.		
1		M	<i>St. Remigius.</i> Camb. Michaelmas Term begins.		6 2	5 37	274	91
2		Tu	City of Glasgow Bank suspended payment, 1878.		6 4	5 35	275	90
3		W	Treaty of Limerick, 1691. <i>Ld. Justice Lopes b.</i> 1828.		6 6	5 33	276	89
4		Th	Marquis of Ripon born, 1827.		6 7	5 30	277	88
5		F	Prince Henry of Battenberg born, 1858.		6 9	5 28	278	87
6		S	<i>St. Faith.</i> W. H. Smith d.'91. C. S. Parnell d.'91.		6 11	5 26	279	86
7		S	Twentieth Sunday after Trinity.		6 12	5 23	280	85
8		M	Owens College, Manchester, opened, 1873.		6 14	5 21	281	84
9		Tu	<i>St. Denys.</i> Giuseppe Verdi, composer, b. 1814.		6 16	5 19	282	83
10		W	Oxford Term begins. Newmarket; Czarevitch.		6 17	5 17	283	82
11		Th	Old Mich. Day. Battle of Camperdown, 1797.		6 19	5 15	284	81
12		F	Elizabeth Fry, Quaker philanthropist, d. 1845.		6 21	5 12	285	80
13		S	<i>Tr. Edw. Conf.</i> Col. Harrison, regicide, extd. 1660.		6 22	5 10	286	79
14		S	Twenty-first S. aft. Trin. Sir W. V. Harcourt b.'27.		6 24	5 8	287	78
15		M	L. E. L., Mrs. Maclean, died, 1838.		6 26	5 6	288	77
16		Tu	Houses of Parliament burned, 1834.		6 27	5 4	289	76
17		W	<i>S. Etheldreda.</i> Lewis Pocock, art patron, d. 1882.		6 29	5 2	290	75
18		Th	<i>St. Luke, Evangelist.</i> Last English Lottery, 1826.		6 31	5 0	291	74
19		F	Sir Charles Wheatstone, physicist, died, 1875.		6 33	4 57	292	73
20		S	Lord Palmerston born, 1784; d. 18 Oct. 1865.		6 34	4 55	293	72
21		S	Twenty-second S. aft. Trin. Batt. Trafalgar, 1805.		6 36	4 53	294	71
22		M	C. H. Jeens, engraver, d.'79. Capt. Mayne Reid d.'83.		6 38	4 51	295	70
23		Tu	Sir Michael Hicks-Beach born, 1837.		6 40	4 49	296	69
24		W	MICH. SITTINGS BEGIN. Newmkt.; Cambr. Stakes.		6 41	4 47	297	68
25		Th	<i>St. Crispin.</i> Sir Jas. Graham, statesman, d. 1864.		6 43	4 45	298	67
26		F	Sir F. Peel b.'23. Wm. Hogarth d. 1764. [1779.		6 45	4 43	299	66
27		S	Capt. Cook, circumnavigator, b. 1728; d. 14 Feb.		6 47	4 41	300	65
28		S	Twenty-third S. aft. Trin. S.S. Simon & Jude.		6 49	4 39	301	64
29		M	Louis Blanc, French politician, b.'11; d. 6 Dec.'82.		6 50	4 37	302	63
30		Tu	Great fire, Tower of London, 1841.		6 52	4 35	303	62
31		W	Hallowmas Eve. Jacob Abbot died, 1879.		6 54	4 34	304	61

PHASES OF THE MOON.

) First Quarter	6d.	7h.	1m.	Afternoon.
o Full Moon	14	6	41	Afternoon.
(Last Quarter	21	6	56	Afternoon.
● New Moon	28	5	57	Afternoon.

Apogee 8d. 2h. m. 251,300 | Perigee 22d. 1h. a. 229,900

RAINFALL IN OCTOBER, 1893.

In this month rain fell on 15 days. The total fall for the month was 4'14 inches; above the average of ten years, 1871-80, by 1'20 inch.

MONTHLY NOTES.

Corrections for next year's Whitaker's Almanack should be sent some time this month.

October 1. Burgess List to be revised some time between 1st and 12th.—Pheasant shooting begins.—Common Lodging-houses to be white-washed in the first week.

5. Dividends due.

10. Various Licences expire.

14. Fire Insurances must be paid.

15. Quarter Sessions begin.

24. Borough Councillors to be nominated.

THE SUN.

Day.	Before Clock.	Hourly Variation of Equation of Time.	Right Ascension at Noon.	Hourly Variation of R. A.	Apparent Declination (Std.) at Noon.	Hourly Variation (C)'s Declination.	Sidereal Time at Noon.
	M. S.	S.	H. M. S.	S.	° ' "		H. M. S.
1	10 22	0'79	12 30 27	9'06	3 17 25	58'3	12 40 49
2	10 41	0'78	12 34 5	9'07	3 40 42	58'2	12 44 46
3	10 59	0'77	12 37 43	9'09	4 3 57	58'0	12 48 42
4	11 18	0'75	12 41 21	9'10	4 27 9	57'9	12 52 39
5	11 36	0'74	12 45 0	9'11	4 50 17	57'8	12 56 35
6	11 53	0'72	12 48 39	9'13	5 13 22	57'6	13 0 32
7	12 10	0'71	12 52 18	9'15	5 36 23	57'4	13 4 29
8	12 27	0'69	12 55 58	9'16	5 59 20	57'2	13 8 25
9	12 44	0'67	12 59 38	9'18	6 22 11	57'0	13 12 22
10	12 59	0'65	13 3 19	9'20	6 44 57	56'8	13 16 18
11	13 15	0'63	13 7 0	9'22	7 7 38	56'6	13 20 15
12	13 30	0'61	13 10 41	9'24	7 30 13	56'3	13 24 11
13	13 44	0'59	13 14 23	9'26	7 52 42	56'0	13 28 8
14	13 58	0'57	13 18 6	9'28	8 15 4	55'8	13 32 4
15	14 12	0'55	13 21 49	9'31	8 37 19	55'5	13 36 1
16	14 25	0'52	13 25 33	9'33	8 59 27	55'2	13 39 58
17	14 37	0'50	13 29 17	9'36	9 21 27	54'8	13 43 54
18	14 49	0'47	13 33 2	9'38	9 43 20	54'5	13 47 51
19	15 0	0'45	13 36 48	9'41	10 5 4	54'1	13 51 47
20	15 10	0'42	13 40 34	9'44	10 26 39	53'8	13 55 44
21	15 20	0'39	13 44 21	9'46	10 48 5	53'4	13 59 40
22	15 29	0'36	13 48 8	9'49	11 9 22	53'0	14 3 37
23	15 37	0'33	13 51 56	9'52	11 30 28	52'6	14 7 33
24	15 45	0'30	13 55 45	9'55	11 51 25	52'1	14 11 30
25	15 52	0'27	13 59 35	9'58	12 12 10	51'7	14 15 27
26	15 58	0'24	14 3 25	9'61	12 32 45	51'2	14 19 23
27	16 3	0'21	14 7 16	9'65	12 53 7	50'7	14 23 20
28	16 8	0'18	14 11 8	9'68	13 13 18	50'2	14 27 16
29	16 12	0'15	14 15 1	9'71	13 33 16	49'7	14 31 13
30	16 15	0'11	14 18 54	9'74	13 53 2	49'1	14 35 9
31	16 17	0'08	14 22 49	9'77	14 12 34	48'6	14 39 6

METEOROLOGICAL OBSERVATIONS, OCTOBER, 1893.

Day.	TEMPERATURE.			BAROM.	RAIN-FALL.	SUN-SHINE.	WIND.	
	Maximum.	Minimum.	Ave. 50 Yrs.					
				Mean.			Directn.	Pressure.
				inches.	inches.	hours.	(Pressure lbs. to foot.)	
1	65'8	44'1	54	29'469	0'00	6'0	SSW	lbs. 0'5
2	63'7	46'9	54	29'366	0'08	6'3	SSW	2'3
3	59'9	43'8	54	29'186	0'02	8'5	SW	2'3
4	62'0	43'8	54	29'037	0'00	7'1	SW	4'8
5	60'6	45'2	53	29'144	0'13	3'6	S	2'5
6	62'0	47'0	53	29'394	0'24	7'1	S	2'2
7	63'0	44'4	52	29'416	0'13	3'8	SSE	4'3
8	62'8	43'8	52	29'601	0'00	5'4	SSE	0'7
9	65'3	41'7	52	29'491	0'95	2'0	NE	1'5
10	59'8	49'6	52	29'738	0'30	5'2	SW	2'9
11	62'9	48'0	51	29'662	0'73	1'0	SW	3'5
12	55'8	42'4	51	29'933	0'04	5'7	WNW	1'4
13	58'9	38'5	51	30'012	0'00	3'7	SW	1'0
14	65'0	53'0	51	29'737	0'18	...	SW	4'0
15	65'2	57'2	50	29'793	0'00	...	SW	3'4
16	66'7	55'2	50	29'823	0'00	2'9	SW	3'4
17	60'2	51'8	50	29'875	0'59	...	SW	0'4
18	58'9	42'6	50	30'017	0'45	6'3	NNE	1'6
19	57'8	38'9	49	30'218	0'00	4'1	SW	0'2
20	59'9	45'7	49	30'209	0'00	1'3	SSW	0'9
21	65'9	51'2	49	30'076	0'00	2'5	SW	2'3
22	55'2	43'5	49	30'066	0'21	...	N	0'6
23	56'0	38'4	49	30'274	0'00	1'7	NNE	0'3
24	56'3	44'0	48	30'199	0'00	0'1	SW	0'8
25	55'3	48'0	48	29'813	0'04	...	SW	5'3
26	54'6	44'5	48	29'644	0'05	5'0	WSW	5'2
27	53'7	39'4	47	29'850	0'00	3'5	W	1'0
28	57'9	41'4	47	29'712	0'00	0'7	SW	7'6
29	56'1	44'7	47	29'618	0'00	2'9	W	5'2
30	48'4	34'0	47	29'752	0'00	4'1	NNW	0'7
31	44'5	30'2	47	29'959	0'00	4'8	NNW	1'0

1. MEMORANDA.

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21. S.

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28. S.

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30.

31.

THE MOON.

Day of M.	Rises Morning.	Sets Afternoon.	Souths Afternoon.	Right Ascension at Noon.	Declination at Noon.	Horizontal Parallax at Noon.	Semi-diameter at Noon.	Age at Noon.	Configurations Jupiter's Satellites at 2h. A.M.
1	h. 5 56	m. 6	h. 11 37	m. 14 15	s. 3 16	51 85	57 28	15 41	2 6
2	10 19	6 25	2 17	15 7	21 42	8	56 42	15 28	3 6
3	11 41	6 50	3 19	16 0	42 25	3	55 57	15 16	4 6
4	aft. 1 56	7 26	4 12	16 55	32 27	44	55 18	15 6	5 6
5	2 42	8 14	5 17	17 50	47 28	17	54 47	14 57	6 6
6	3 15	9 15	5 57	18 45	22 18	18	54 26	14 51	7 6
7	3 17	10 24	6 47	19 38	18 26	31	54 15	14 48	8 6
8	3 41	11 38	7 35	20 29	0 23	37	54 14	14 48	9 6
9	3 57	mrn.	8 20	21 17	20 19	43	54 23	14 51	10 6
10	4 11	0 53	9 3	22 3	15 1	5	54 41	14 56	11 6
11	4 23	2 7	9 45	22 48	9 39	44	55 6	15 2	12 6
12	4 33	3 21	10 26	23 32	43 28	3	55 37	15 11	13 6
13	4 42	4 35	11 8	0 17	16 2	14	56 11	15 20	14 6
14	4 53	5 52	11 53	1 3 12	8 21	50	56 46	15 30	15 6
15	5 6	7 12	mrn.	1 51 33	14 15	41	57 20	15 39	16 6
16	5 24	8 34	0 40	2 43	17 19	36	57 50	15 47	17 6
17	5 48	10 1	1 32	3 39	6 24	1	58 16	15 54	18 6
18	6 26	11 26	2 28	4 38	58 27	8	58 38	16 0	19 6
19	7 19	aft.	3 29	5 41	52 35	58	58 54	16 5	20 6
20	8 30	1 38	4 31	6 45	48 28	12	59 6	16 8	21 6
21	9 55	2 21	5 33	7 48	30 25	59	59 13	16 10	22 6
22	11 24	2 47	6 32	8 48	13 22	9	59 15	16 10	23 6
23	mrn.	3 8	7 27	9 44	20 17	2	59 13	16 10	24 6
24	0 54	3 22	8 18	10 37	9 11	2	59 6	16 8	25 6
25	2 20	3 35	9 7	11 27	33 4	30	58 52	16 4	26 6
26	3 43	3 46	9 53	12 16	40 2	10	58 32	15 59	27 6
27	5 6	3 58	10 40	13 5	38 8	41	58 5	15 51	28 6
28	6 29	4 11	11 27	13 55	26 14	41	57 33	15 42	29 6
29	7 53	4 28	aft.	14 46	50 19	54	56 57	15 33	0 18
30	9 16	4 50	1 7	15 40	8 24	3	56 19	15 22	1 18
31	10 33	5 21	2 0	16 35	6 26	56	55 42	15 12	2 18

APPARENT RIGHT ASCENSION OF THE PRINCIPAL PLANETS AT MEAN NOON.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
3	13 52 15	11 46 6	2 6 55	6 24 24	13 39 15
8	14 17 58	12 8 59	2 1 30	6 25 42	13 41 30
13	14 42 24	12 31 52	1 55 17	6 26 39	13 43 45
18	15 4 42	12 54 50	1 48 38	6 27 16	13 46 2
23	15 23 9	13 17 58	1 41 57	6 27 31	13 48 20
28	15 34 42	13 41 21	1 35 38	6 27 24	13 50 37

APPARENT DECLINATION OF THE ABOVE PLANETS.

	♂ MERCURY.	♀ VENUS.	♂ MARS.	♂ JUPITER.	♂ SATURN.
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
3	13 2 58	3 5 52	9 31 8	22 59 6	7 53 47
8	15 53 19	0 38 0	9 16 29	22 58 36	8 6 54
13	18 21 11	1 51 58	8 59 25	22 58 16	8 20 1
18	20 20 22	4 19 51	8 41 21	22 58 10	8 33 4
23	21 42 58	6 46 46	8 23 48	22 58 18	8 46 1
28	22 16 18	9 10 14	8 31 28	22 58 43	8 58 49

HORIZONTAL EQUATORIAL PARALLAX OF SUN AND PLANETS.

SEMI-DIAMETER OF SUN AND PLANETS.

	☉	♂	♀	♂	♂	♂	☉	♂	♀	♂	♂	♂
D.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.	h. m. s.
5	8 9	7 3	5 4	20 3	1 8	0 8	16 2	2 7	5 1	12 7	18 8	7 0
15	8 9	8 2	5 3	20 5	1 9	0 8	16 5	3 1	5 0	12 9	19 4	7 0
25	8 9	9 9	5 3	19 9	1 9	0 8	16 8	3 7	4 9	12 5	20 0	7 0

Mean Longitude of Moon's ascending Node, October 1, 0° 42' 7".

ECLIPSES, OCCULTATIONS, AND OTHER CELESTIAL PHENOMENA.

October 1. Day breaks at 4h. 8m. *morn.*, and Twilight ends at 7h. 32m. *aft.*, the length of the Day being 11h. 35m.

Oct. 2. Mercury at greatest distance from the Sun, 4h. *morn.*

Oct. 5. Mean time of Sun's semi-diameter passing the meridian, 1m. 4' 48".

Oct. 7. Occultation of A Sagittarii; magnitude 5. The disappearance takes place at 6h. 33m. *aft.*, 3' from the vertex; the reappearance at 7h. 1m. *aft.*, 321' from the vertex.

Oct. 19. Mercury at greatest elongation (24°) East, 8h. *morn.*

Oct. 20. Jupiter in conjunction with the Moon, 5h. *morn.* 4' 53" S.

Oct. 20. Mean time of Sun's semi-diameter passing the meridian, 1m. 5' 58".

Oct. 20. Mars in opposition to the Sun, 10h. *aft.*

Oct. 21. Saturn in conjunction with the Sun, 11h. *morn.*

Oct. 30. Venus and Saturn in conjunction, 4h. *aft.* ♀ 1° 7' S.

In this month the Mornings decrease 52m., the Afternoons 1h. 3m.

MORNING AND EVENING STARS.

♂ MERCURY is an evening star, but sets too soon after the Sun to be easy of observation.

♀ VENUS is a morning star, and in the course of the month passes from near β Virginis to Spica. Near to Saturn on the 30th.

♂ MARS is very well situated for observation in this month; very near the star α Piscium on the 23rd. In opposition to the Sun on the 20th.

♂ JUPITER rises late in the evening, in the North-east, not far from the star μ Geminorum.

♂ SATURN too near the Sun for observation in this month. In conjunction with the Sun on the 21st.

Day of		Time of High Water at the undermentioned Places—															
Month.	Week.	LONDON BRIDGE		LIVERPOOL.		BRISTOL.		HULL.		GREENOCK.		LEITH.		DUBLIN (Bar).			
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.
1	M	2 ⁵⁵	3 ¹³	0 10	0 28	8 18	8 36	7 28	7 46	1 6	1 23	3 27	3 45	...	...	...	...
2	Tu	3 ³⁰	3 ⁴⁸	0 46	1 3	8 52	9 9	8 2	8 19	1 42	1 59	4 2	4 19	0 25	0 43	0 7	0 7
3	W	4 5	4 24	1 21	1 38	9 27	9 43	8 38	8 56	2 17	2 35	4 39	4 58	1 2	1 20	0 43	0 43
4	Th	4 41	4 57	1 54	2 12	9 59	10 16	9 13	9 31	2 51	3 8	5 14	5 35	1 38	1 58	1 20	1 20
5	F	5 14	5 34	2 30	2 51	10 32	10 51	9 50	10 13	3 26	3 47	5 56	6 20	2 18	2 41	2 41	2 41
6	S	5 56	6 19	3 13	3 41	11 11	11 37	10 40	11 12	4 9	4 35	6 44	7 15	3 4	3 35	3 35	3 35
7	S	6 47	7 22	4 16	4 57	...	0 12	11 51	...	5 6	5 44	7 53	8 34	4 12	4 51	4 51	4 51
8	M	7 59	8 44	5 45	6 37	0 53	1 41	0 29	1 14	6 29	7 15	9 21	10 9	5 34	6 19	6 19	6 19
9	Tu	9 36	10 21	7 24	8 2	2 33	3 20	1 58	2 39	8 1	8 41	10 51	11 28	7 1	7 38	7 38	7 38
10	W	11 2	11 33	8 32	8 58	4 2	4 33	3 17	3 47	9 12	9 40	11 56	...	8 8	8 35	8 35	8 35
11	Th	...	0 1	9 20	9 38	5 0	5 24	4 14	4 36	10 4	10 23	0 22	0 42	8 59	9 20	9 20	9 20
12	F	0 24	0 42	9 54	10 10	5 43	6 1	4 54	5 10	10 42	11 0	0 59	1 15	9 38	9 56	9 56	9 56
13	S	0 59	1 16	10 25	10 40	6 19	6 36	5 27	5 42	11 17	11 34	1 33	1 48	10 10	10 23	10 23	10 23
14	S	1 32	1 48	10 56	11 12	6 51	7 7	5 58	6 14	11 51	...	2 2	2 18	10 37	10 52	10 52	10 52
15	M	2 3	2 17	11 28	11 45	7 23	7 38	6 30	6 46	0 7	0 24	2 33	2 47	11 7	11 23	11 23	11 23
16	Tu	2 32	2 49	...	0 3	7 54	8 11	7 3	7 21	0 41	0 59	3 3	3 20	11 41	...	...	...
17	W	3 6	3 22	0 21	0 39	8 29	8 45	7 39	7 56	1 18	1 36	3 38	3 56	0 0	0 18	0 18	0 18
18	Th	3 40	3 58	0 57	1 16	9 3	9 21	8 13	8 32	1 53	2 12	4 14	4 34	0 36	0 56	0 56	0 56
19	F	4 18	4 37	1 35	1 55	9 39	9 59	8 52	9 14	2 31	2 52	4 54	5 16	1 17	1 40	1 40	1 40
20	S	4 57	5 21	2 15	2 43	10 21	10 43	9 37	10 3	3 14	3 39	5 42	6 10	2 5	2 31	2 31	2 31
21	S	5 47	6 16	3 10	3 43	11 9	11 40	10 35	11 14	4 6	4 38	6 41	7 17	3 1	3 37	3 37	3 37
22	M	6 50	7 29	4 24	5 13	...	0 20	11 59	...	5 15	6 0	8 1	8 50	4 20	5 7	5 7	5 7
23	Tu	8 15	9 4	6 6	6 54	1 9	2 1	0 46	1 31	6 47	7 31	9 40	10 22	5 52	6 32	6 32	6 32
24	W	9 52	10 33	7 34	8 10	2 50	3 33	2 11	2 49	8 13	8 49	11 1	11 34	7 11	7 45	7 45	7 45
25	Th	11 10	11 41	8 38	9 3	4 11	4 40	3 24	3 54	9 20	9 47	...	0 2	8 15	8 42	8 42	8 42
26	F	...	0 7	9 25	9 47	5 7	5 31	4 19	4 41	10 11	10 35	0 25	0 46	9 8	9 31	9 31	9 31
27	S	0 30	0 52	10 5	10 25	5 54	6 14	5 3	5 21	10 55	11 17	1 8	1 28	9 50	10 18	10 18	10 18
28	S	1 12	1 31	10 45	11 5	6 35	6 55	5 41	6 2	11 38	...	1 47	2 6	10 26	10 45	10 45	10 45
29	M	1 51	2 10	11 23	11 43	7 15	7 34	6 23	6 42	0 0	0 19	2 26	2 43	11 3	11 21	11 21	11 21
30	Tu	2 28	2 47	...	0 1	7 52	8 9	7 1	7 19	0 38	0 57	3 1	3 18	11 39	11 59	11 59	11 59
31	W	3 4	3 21	0 20	0 38	8 27	8 45	7 37	7 55	1 17	1 35	3 36	3 55	...	0 17	0 17	0 17

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ♀			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.
1	7 58M	1 1A	6 4A	4 32M	10 56M	5 20A	6 32A	1 30M	8 23M	9 26A	5 44M	1 58A	7 33M	0 57A	6 21A
8	8 29M	1 10A	5 51A	4 53M	11 0M	5 7A	5 59A	0 55M	7 46M	9 1A	5 18M	1 32A	7 11M	0 33A	5 55A
15	8 55M	1 16A	5 37A	5 16M	11 5M	4 54A	5 25A	0 19M	7 8M	8 34A	4 52M	1 6A	6 48M	0 9A	5 30A
22	9 10M	1 16A	5 22A	5 38M	11 10M	4 42A	4 51A	11 42A	6 28M	8 7A	4 25M	0 39A	6 25M	11 44M	5 3A
29	9 3M	1 4A	5 5A	6 1M	11 15M	4 29A	4 17A	11 6A	5 50M	7 39A	3 57M	0 11A	6 2M	11 20M	4 38A

APPARENT RIGHT ASCENSION AND DECLINATION of the POLE STAR.

R. A.			DECL. N.		
D.	h. m.	s.	h. m.	'	"
1	1 20	50.9	88	44	48
10	1 20	52.9	88	44	51
19	1 20	54.1	88	44	55
28	1 20	53.3	88	44	58

ANGULAR DISTANCE of the MOON FROM a ARIETIS.

Position of Star.		6 P.M.		9 P.M.		Midnight.	
D.		h. m.	s.	h. m.	s.	h. m.	s.
10	East	66	25	64	55	63	24
11	East	54	17	52	46	51	14
12	East	41	58	40	25	38	52
13	East	29	30	27	56	25	22

On the 1st of October, Cassiopeia, Andromeda, Pisces, and Cetus are on the meridian at midnight; while Cancer and Orion are rising, and Hercules and Capricornus setting.

In Andromeda, just below the girdle, is a large and irresolvable Nebula in the form of an elongated ellipse. It is situated in R.A. $0^h. 37^m. 0^s.$, and Decl. $40^\circ 41' N.$ In Sept., 1885, a decided stellar nucleus was observed in R.A. $0^h. 36^m. 31^s.$, Decl. $40^\circ 38' N.$, probably unconnected with the Nebula.

A splendid group of stars may be observed in this month, situated in the sword-handle of Perseus: it is a magnificent collection of stars, much condensed towards the centre, and on a fine night, without moonlight, such as the nights at the beginning and end of the month, affords one of the most brilliant telescopic objects in the heavens. One of the stars near the middle of the group is of a fine ruby colour. It is situated in R.A. $2^h. 11^m. 36^s.$, and Decl. $56^\circ 40' N.$

DAY OF			Fasts and Festivals. Remarkable Days—Events.		THE SUN		DAYS	
M.	Light and Dark.	W.	SUN ENTERS SAGITTARIUS 22d. 7h. M.		Rises.	Sets.	of the Year.	to end of Year.
					H. M.	H. M.		
1		Th	All Saints' Day.		6 56	4 32	305	60
2		F	<i>All Souls.</i> Lord Chancellor Herschell b. 1837.		6 57	4 30	306	59
3		S	<i>St. Winifrede.</i> Mikado of Japan born, 1852.		6 59	4 28	307	58
4		S	Twenty-fourth Sunday after Trinity.		7 1	4 26	308	57
5		M	Gunpowder Plot. Battle of Inkerman, 1854.		7 3	4 25	309	56
6		Tu	<i>St. Leonard.</i> Rt. Hon. Henry Fawcett died, 1884.		7 5	4 23	310	55
7		W	Bank Rate 9 per cent. 1873.		7 6	4 21	311	54
8		Th	John Milton died, 1674; born 9 Dec., 1608.		7 8	4 20	312	53
9		F	Lord Mayor's Day. Prince of Wales born, 1841.		7 10	4 18	313	52
10		S	Oliver Goldsmith born, 1728; died, 4 Apr. 1774.		7 12	4 16	314	51
11		S	Twenty-fifth S. aft. Trin. St. Martin. Half-Qr. Day.		7 13	4 15	315	50
12		M	Mrs. E. Gaskell died, 1865. Ld. Raleigh b. 1842.		7 15	4 13	316	49
13		Tu	<i>St. Brice.</i> Rev. Charles Simeon died, 1836.		7 17	4 12	317	48
14		W	G. W. F. Hegel, philosopher, died, 1831.		7 19	4 11	318	47
15		Th	<i>St. Machutus.</i> Sir Hugh H. Gough born, 1833.		7 20	4 9	319	46
16		F	John Bright born, 1811; died, 26 March, 1889.		7 22	4 8	320	45
17		S	<i>St. Hugh.</i> Sir Lambton Loraine, Bt., b. 1838.		7 24	4 6	321	44
18		S	Twenty-sixth Sunday after Trinity.		7 25	4 5	322	43
19		M	Ferdinand de Lesseps, canal engineer, b. 1805.		7 27	4 4	323	42
20		Tu	<i>St. Edmund.</i> First Noncon. meeting-house, 1572.		7 29	4 3	324	41
21		W	Empress Frederick of Germany born, 1840.		7 30	4 2	325	40
22		Th	<i>St. Cecilia.</i> Justin McCarthy born, 1830.		7 32	4 0	326	39
23		F	<i>St. Clement.</i> Old Martinmas.		7 34	3 59	327	38
24		S	Lord Melbourne d. 1848. Tasmania discovd. 1642.		7 35	3 58	328	37
25		S	Twenty-seventh S. after Trinity. St. Catherine.		7 37	3 57	329	36
26		M	Marshal Soult d. 1851. Empress Dagmar b. 1847.		7 39	3 56	330	35
27		Tu	El. of Selborne b. 1812. Duchess of Teck b. 1833.		7 40	3 55	331	34
28		W	Washington Irving died, 1859.		7 42	3 55	332	33
29		Th	Mary Somerville, mathematician, died, 1872.		7 43	3 54	333	32
30		F	<i>St. Andrew, Ap. & Mart.</i> Bp. of London b. 1821.		7 43	3 53	334	31

PHASES OF THE MOON.

☾ First Quarter	5d. 3h. 16m.	Afternoon.
☾ Full Moon	13 7 49	Morning.
☾ Last Quarter	20 2 8	Morning.
● New Moon	27 8 54	Morning.

Apogee 4d. 10h. A. 251,300 | Perigee 16d. 8h. A. 228,200

RAINFALL IN NOVEMBER, 1892.

In this month rain fell on 18 days. The total fall for the month was 2.21 inches; below the average of ten years, 1871-80, by 0.17 inch.

An "Inch of Rain" means a gallon of water spread over a surface of nearly two square feet, or 3,630 cubic feet=100 tons upon an acre.

MONTHLY NOTES.

November 1. Latest day for receiving corrections for Whitaker's Almanack.

1. Salmon-fishing with rod and line ends.—Ordinary day of election of Borough Councillors.—Holiday at Bank Transfer Office and Stock Exchange.—Fox-hunting begins.

9. Mayors and Aldermen of Boroughs to be elected and Sheriffs appointed.

11. Martinmas: Scotch Quarter Day.
12. County Sheriffs for next year nominated.
15. Solicitors', notaries', proctors', and sworn clerks' certificates expire. See Note, Dec. 15.

Day of		Time of High Water at the undermentioned Places—																1894.
Month.	Week.	LONDON BRIDGE		LIVERPOOL		BRISTOL		HULL		GREENOCK.		LEITH.		DUBLIN (Bar)				
		Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.	Morn.	After.			
1	M	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.	H. M.			
2	Tu	2 ⁵⁵	3 ¹³	0 10	0 28	8 18	8 36	7 28	7 46	1 6	1 23	3 27	3 45	...	...			
3	W	3 ³⁰	3 ⁴⁸	0 46	1 3	8 52	9 9	8 2	8 19	1 42	1 59	4 2	4 19	0 25	0 7			
4	Th	4 5	4 24	1 21	1 38	9 27	9 43	8 38	8 56	2 17	2 35	4 39	4 58	1 2	1 43			
5	F	4 41	4 57	1 54	2 12	9 59	10 16	9 13	9 31	2 51	3 8	5 14	5 35	1 28	1 58			
6	S	5 14	5 34	2 30	2 51	10 32	10 51	9 50	10 13	3 26	3 47	5 56	6 20	2 18	2 41			
7	S	5 56	6 19	3 13	3 41	11 11	11 37	10 40	11 12	4 9	4 35	6 44	7 15	3 4	3 35			
8	M	6 47	7 22	4 16	4 57	...	0 12	11 51	...	5 6	5 44	7 53	8 34	4 12	4 51			
9	Tu	7 59	8 44	5 45	6 37	0 53	1 41	0 29	1 14	6 29	7 15	9 21	10 9	5 34	6 19			
10	W	9 36	10 21	7 24	8 2	2 33	3 20	1 58	2 39	8 1	8 41	10 51	11 28	7 1	7 38			
11	Th	11 2	11 33	8 32	8 58	4 2	4 33	3 17	3 47	9 12	9 40	11 56	...	8 8	8 35			
12	F	...	0 1	9 20	9 38	5 0	5 24	4 14	4 36	10 4	10 23	0 22	0 42	8 59	9 20			
13	S	0 24	0 42	9 54	10 10	5 43	6 1	4 54	5 10	10 42	11 0	0 59	1 15	9 38	9 20			
14	S	0 59	1 16	10 25	10 40	6 19	6 36	5 27	5 42	11 17	11 34	1 33	1 48	10 10	10 23			
15	M	1 32	1 48	10 56	11 12	6 51	7 7	5 58	6 14	11 51	...	2 2	2 18	10 37	10 52			
16	Tu	2 3	2 17	11 28	11 45	7 23	7 38	6 30	6 46	0 7	0 24	2 2	2 18	11 7	11 23			
17	W	2 32	2 49	...	0 3	7 54	8 11	7 3	7 21	0 41	0 59	3 3	3 20	11 41	...			
18	Th	3 6	3 22	0 21	0 39	8 29	8 45	7 39	7 56	1 18	1 36	3 38	3 56	0	0 18			
19	F	3 40	3 58	0 57	1 16	9 3	9 21	8 13	8 32	1 53	2 12	4 14	4 34	0 36	0 56			
20	S	4 18	4 37	1 35	1 55	9 39	9 59	8 52	9 14	2 31	2 52	4 54	5 16	1 17	1 40			
21	S	4 57	5 21	2 18	2 43	10 21	10 43	9 37	10 3	3 14	3 39	5 42	6 10	2 5	2 31			
22	M	5 47	6 16	3 10	3 43	11 9	11 40	10 35	11 14	4 6	4 38	6 41	7 17	3 1	3 37			
23	Tu	6 50	7 29	4 24	5 13	...	0 20	11 59	...	5 15	6 0	8 1	8 50	4 20	5 7			
24	W	8 15	9 4	6 6	6 54	1 9	2 1	0 46	1 31	6 47	7 31	9 40	10 22	5 52	6 32			
25	Th	9 52	10 33	7 34	8 10	2 50	3 33	2 11	2 49	8 13	8 49	11 1	11 34	7 11	7 45			
26	F	11 10	11 41	8 38	9 3	4 11	4 40	3 24	3 54	9 20	9 47	...	0 2	8 15	8 42			
27	S	...	0 7	9 25	9 47	5 7	5 31	4 19	4 41	10 11	10 35	0 25	0 46	9 8	9 31			
28	S	0 30	0 52	10 5	10 25	5 54	6 14	5 3	5 21	10 55	11 17	1 8	1 28	9 50	10 8			
29	M	1 12	1 31	10 45	11 5	6 35	6 55	5 41	6 2	11 38	...	1 47	2 6	10 26	10 45			
30	Tu	1 51	2 10	11 23	11 43	7 15	7 34	6 23	6 42	0 0	0 19	2 26	2 43	11 3	11 21			
31	W	2 28	2 47	...	0 1	7 52	8 9	7 1	7 19	0 38	0 57	3 1	3 18	11 39	11 59			
		3 4	3 21	0 20	0 38	8 27	8 45	7 37	7 55	1 17	1 35	3 36	3 55	...	0 17			

RIISING, SOUTHING, and SETTING of the PRINCIPAL PLANETS at intervals of Seven Days.

D.	MERCURY ☿			VENUS ♀			MARS ♂			JUPITER ♃			SATURN ♄		
	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.	Rises h. m.	Souths h. m.	Sets h. m.
1	7 58m	1 1A	6 4A	4 32m	10 56m	5 20A	6 32A	1 30m	8 23m	9 26A	5 44m	1 58A	7 33m	0 57A	6 21A
8	8 29m	1 10A	5 51A	4 53m	11 0m	5 7A	5 59A	0 55m	7 46m	9 1A	5 18m	1 32A	7 11m	0 33A	5 55A
15	8 55m	1 16A	5 37A	5 16m	11 5m	4 54A	5 25A	0 19m	7 8m	8 34A	4 52m	1 6A	6 48m	0 9A	5 30A
22	9 10m	1 16A	5 22A	5 38m	11 10m	4 42A	4 51A	11 42A	6 28m	8 7A	4 25m	0 39A	6 25m	11 44m	5 3A
29	9 3m	1 4A	5 5A	6 1m	11 15m	4 29A	4 17A	11 6A	5 50m	7 39A	3 57m	0 11A	6 2m	11 20m	4 38A

APPARENT RIGHT ASCENSION AND DECLINATION OF THE POLE STAR.

D.	R. A.		DECL. N.	
	h. m.	s.	°	'
1	1 20	50 ⁹	88	44 48
10	1 20	52 ⁹	88	44 51
19	1 20	54 ¹	88	44 55
28	1 20	53 ³	88	44 58

ANGULAR DISTANCE OF THE MOON FROM α ARIETIS.

D.	Position of Star.	6 P.M.		9 P.M.		Midnight.	
		°	'	°	'	°	'
10	East	66	25 20	64	55 2	63	24 33
11	East	54	17 53	52	46 7	51	14 10
12	East	41	58 39	40	25 28	38	52 9
13	East	29	30 10	27	56 25	26	22 45

On the 1st of October, Cassiopeia, Andromeda, Pisces, and Cetus are on the meridian at midnight; while Cancer and Orion are rising, and Hercules and Capricornus setting.

In Andromeda, just below the girdle, is a large and irresolvable Nebula in the form of an elongated ellipse. It is situated in R.A. $oh. 37m. os.$, and Decl. $40^{\circ} 41' N.$ In Sept., 1835, a decided stellar nucleus was observed in R.A. $oh. 36m. 31s.$, Decl. $40^{\circ} 38' N.$, probably unconnected with the Nebula.

A splendid group of stars may be observed in this month, situated in the sword-handle of Perseus: it is a magnificent collection of stars, much condensed towards the centre, and on a fine night, without moonlight, such as the nights at the beginning and end of the month, affords one of the most brilliant telescopic objects in the heavens. One of the stars near the middle of the group is of a fine ruby colour. It is situated in R.A. $2h. 11m. 36s.$, and Decl. $56^{\circ} 40' N.$

DAY OF			Fasts and Festivals. Remarkable Days—Events. SUN ENTERS SAGITTARIUS 22d. 7h. M.	THE SUN		DAYS	
M.	Light and Dark.	W.		Rises.	Sets.	of the Year.	to end of Year.
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22		Th	St. Cecilia. Justin McCarthy born, 1830.	7 32	4 0	326	39
23		F	St. Clement. Old Martinmas.	7 34	3 59	327	38
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28		W	Washington Irving died, 1859.	7 42	3 55	332	33
29		Th	Mary Somerville, mathematician, died, 1872.	7 43	3 54	333	32
30		F	St. Andrew, Ap. & Mart. Bp. of London b. 1821.	7 43	3 53	334	31

PHASES OF THE MOON.

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☾ Last Quarter	20 2 8	Morning.
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